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United States Department of Agriculture,
 OFFICE OF EXPERIMENT STATIONS,
 A. C. TRUE, Director.

**LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF
 EXPERIMENT STATIONS DURING JANUARY, 1909.**

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Feeds, Seeds, and Weeds. By E. H. Jenkins. (Bulletin 161, pp. 3-6.)

The number and vitality of weed seeds found in a number of feeding stuffs on sale in the State are reported in this bulletin.

Food Products, 1908. By J. P. Street. (Biennial Report, 1907-8, pt. 9, pp. 573-716.)

This contains the results of food inspection work in Connecticut for the year ended July 31, 1908.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Status of Soil Fertility Investigations. By E. Davenport. (Circular 123, pp. 3-56.)

This is a discussion of the theories relating to soil fertility from the view point of the Illinois Station.

Chemical Principles of Soil Fertility. By C. G. Hopkins. (Circular 124, pp. 16.)

This is an address delivered before the American Society of Agronomy at Cornell University, Ithaca, N. Y., July 11, 1908.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 11.)

This contains a brief report by the director reviewing the principal lines of work, lists of publications issued during the year and from 1888-1908, including those now available for distribution, and a financial statement for the year ended June 30, 1908.

INDIANA STATION, Lafayette, A. Goss, Director.

Steer Feeding. II—Winter Steer Feeding, 1906-7, 1907-8. By J. H. Skinner and W. A. Cochel. (Bulletin 129, pp. 233-278.)

This bulletin presents the results of feeding experiments with steers under the following topics: (1) The influence of age on economy and profit in fattening steers in winter; (2) corn silage as a roughage in fattening two-year-old steers; (3) cotton-seed meal as a supplement in fattening two-year-old steers; and (4) timothy *v.* clover hay as a roughage in fattening two-year-old steers.

Steer Feeding. III—Results of Short *v.* Long Feeding Periods. By J. H. Skinner and W. A. Cochel. (Bulletin 130, pp. 281-301.)

This bulletin defines what is meant by "short feeding" and "long-feeding," and presents the information secured at the station during the past two years as to the rate and cost of gain, feed consumed, degree of finish attained and profit secured from feeding cattle through a "short" and "long" feeding period.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Yellow Berry Problem in Kansas Hard Winter Wheats. (Bulletin 156, pp. 35, dgm. 1.)

The causes and the possibility of breeding out "yellow berry" in Kansas hard wheat were investigated by the station and are reported upon in this bulletin.

Studies on Hog Cholera and Preventive Treatment. (Bulletin 157, pp. 37-90, pls. 8, dgms. 34.)

The results of experiments made to attenuate the hog-cholera virus and of inoculation experiments are reported in this bulletin.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Analyses of Commercial Feeding Stuffs. By J. E. Halligan. (Bulletin 114, pp. 3-255.)

The results of feeding stuff inspection work in the State of Louisiana, including analyses of 8,615 samples collected during the season of 1907-8, are reported in this bulletin.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Miscellaneous Treatment for San José Scale. By T. B. Symons. (Bulletin 131, pp. 129-149.)

The results of spraying experiments to control the San José scale made by the station with various commercial and homemade washes are reported, together with fumigation tests and experiments in dipping nursery trees.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 240, pp. 4.)

This is a summary for December, 1908.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Inspection and Analysis of Cotton-seed Meal. (Bulletin 114, pp. 3-35.)

This bulletin summarizes the results of the inspection of cotton-seed meal in Mississippi, including analyses of 414 samples, for the season of 1907-8.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 12.)

This contains the organization list of the station, treasurer's report, and report of the director reviewing the work of the station during the fiscal year ended June 30, 1906.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. 12.)

A report similar in contents and scope to the above for the year 1907.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 14.)

A report similar in contents and scope to the above for the year 1908.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Experiments on the Digestibility of Prickly Pear by Cattle. By R. F. Hare. (Bulletin 69, pp. 5-48, figs. 1-3.)

The results of experiments conducted in cooperation with the Bureau of Plant Industry of this Department to determine the digestibility of prickly pear with a view of guiding the feeder in the preparation of rations from this plant are reported in this bulletin.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Troubles of Alfalfa in New York. By F. C. Stewart, G. T. French, and J. K. Wilson. (Bulletin 305, pp. 333-416, pls. 12, fig. 1.)

"The purpose of this bulletin is to give an account of the hindrances, both great and small, to the successful culture of alfalfa in New York; to state their relative importance, their nature and distinguishing characters, and the best means of overcoming them. Special attention is given to dodder, fungus diseases, and the impurities and adulteration of seed."

Alfalfa Troubles. By F. H. Hall. (Bulletin 305, popular edition, pp. 3-16, figs. 2.)

A popular edition of the above bulletin.

Control of Leaf Blister-mite in Apple Orchards. By P. J. Parrott. (Bulletin 306, pp. 417-438.)

This bulletin discusses the economic importance of the leaf blister-mite and gives the results of numerous experiments carried on in different parts of the State during 1907 for the purpose of controlling this pest.

Potato-spraying Experiments in 1907. By F. C. Stewart, G. T. French, and F. A. Sirrine. (Bulletin 307, pp. 439-468.)

This bulletin gives the results of the sixth year's work in the 10-year series of potato-spraying experiments begun in 1902, and conducted during 1907 along the same lines as in previous years. Forty separate experiments are reported.

Methods of Paying for Milk at Cheese Factories. By L. L. Van Slyke. (Bulletin 308, pp. 469-506.)

This bulletin discusses in detail the various methods proposed for the purpose of paying for milk at cheese factories in the State.

The Bacterial Flora of Cheddar Cheese. By H. A. Harding and M. J. Prucha. (Technical Bulletin 8, pp. 121-193, dgms. 11.)

The work here reported is a part of the investigation of cheese ripening which is being conducted jointly by the dairy, the chemical, and the bacteriological departments of this station, the results having appeared in a series of bulletins of which this is a continuation. This bulletin gives the results obtained from technical study during the past four years to determine accurately the kinds of bacteria present in the cheese.

Twenty-sixth Annual Report, 1907. (Annual Report, 1907, pt. 3, pp. VII+362, pls. 19, map 1.)

This contains the organization list of the station, a report of the papers and addresses presented at the twenty-fifth anniversary exercises held at Geneva, N. Y., August 29, 1907, and summaries by the director and station officers reviewing the principal lines of station work and presenting the most important results secured during the past twenty-five years.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Labels and Rulings. By E. F. Ladd. (Special Bulletin 7, pp. 8.)

This bulletin contains a brief summary of the proceedings and the resolutions of the food commissioners of the middle and northwestern States who met in conference at St. Paul, Minn., September 17 and 18, 1907, to consider the forms of labels which manufacturers of food supplies doing business in these States may put upon their goods without their sale being contested.

Labels and Rulings. By E. F. Ladd. (Special Bulletin 8, pp. 3.)

A summary of the second conference of food commissioners held at Madison, Wis., September 29 and 30, 1908, for purposes similar to those mentioned in the preceding bulletin.

OHIO STATION, Wooster, C. E. Thorne, Director.

Meteorological Summary—Press Bulletins—Index. (Bulletin 196, pp. 263–291.)

This bulletin contains a summary of meteorological phenomena for 1907, reprints of Press Bulletins 286–292 issued during the year, and a subject index.

The Catalpa Midge (*Cecidomyia catalpae*). By H. A. Gossard. (Bulletin 197, pp. 13, figs. 9.)

This bulletin discusses the character of damage and importance of the catalpa midge, its life history and habits, natural enemies, and means of control, with notes on its past history and literature.

Score Cards for Dent Corn. (Circular 86, pp. 3.)

Explanatory notes are given in this circular with a view of furnishing directions for the proper selection of seed corn.

Twenty-seventh Annual Report, 1908. (Annual Report, 1908, pp. XXIX, pl. 1.)

This contains a report by the secretary, a financial statement for the year ended June 30, 1908, the report of the director reviewing the work of the station in 1908, and a list of publications issued during the year.

OKLAHOMA STATION, Stillwater, B. C. Pittuck, Acting Director.

Seventeenth Annual Report, 1908. (Annual Report, 1908, pp. 80.)

This contains a report by the acting director on the work of the station officers, and summaries of the bulletins, circulars, and press bulletins issued during the year.

OREGON STATION, Corvallis, J. Withycombe, Director.

Orchard Survey of Jackson County. By C. I. Lewis, S. L. Bennett, and C. C. Vincent. (Bulletin 101, pp. 3–55, figs. 15.)

This is the second report of investigations conducted by the station in counties where fruit growing is more or less specialized, for the purpose of presenting general principles on the culture, harvesting, and marketing of fruit, which should be of value to fruit growers in Oregon. The first report was published in Bulletin 99 of the station.

Digestibility of Kale, Vetch Hay, Steamed and Unsteamed Silage. By J. Withycombe and C. E. Bradley. (Bulletin 102, pp. 3–29.)

The results of digestion experiments with two cows from the station herd to determine the digestibility of kale, vetch hay, and steamed and unsteamed corn silage and vetch silage are tabulated and discussed in this bulletin.

TEXAS STATION, College Station, H. H. Harrington, Director.

Nature and Use of Commercial Fertilizers. By G. S. Fraps. (Bulletin 112, pp. 5–35.)

This bulletin gives information regarding the nature and use of fertilizers and was prepared for the use of the farmers in the State who use commercial fertilizers, the combination of fertilizing elements required by the most important staple crops grown in the State being indicated.

Spray Calendar. By C. E. Sanborn. (Bulletin 113, pp. 5–10, pl. 1.)

Notes are given in this bulletin on different kinds of spraying machinery and formulas for the preparation of a large number of insecticides in common use are presented.

Composition of White Lead and Paints. By G. S. Fraps. (Bulletin 114, pp. 5–11.)

“The object of this bulletin is to present the composition of certain Texas paints which have been subjected to analysis and to discuss paints and paint laws.”

UTAH STATION, Logan, E. D. Ball, Director.

The Storage of Winter Precipitation in Soils. By J. A. Widtsoe.
 (Bulletin 104, pp. 281-316, dgms. 4.)

This bulletin reports the results of field observations made at the station and on dry farms in different parts of the State to determine the proper basis for supplemental irrigation and the best methods of conserving and utilizing natural precipitation in dry farming.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Inheritance in Tomato Hybrids. By H. L. Price and A. W. Drinkard, jr.
 (Bulletin 177, pp. 17-53, pls. 10, figs. 5.)

The experiments reported in this bulletin were begun in 1906 for the purpose of testing Mendel's law of inheritance for tomato characteristics and also with a view of establishing certain improved strains of tomatoes of superior and special economic value.

Causes of the Heavy Loss of Lambs in 1908. By W. J. Quick and
 A. P. Spencer. (Bulletin 178, pp. 57-74, figs. 7.)

Statistics of the sheep industry in Virginia, the causes of the severe loss of lambs in January and February, 1908, and suggestions for the proper care of ewes before and after lambing are presented in this bulletin.

Homemade Soluble Oils for Use Against the San José Scale. By J. L. Phillips. (Bulletin 179, pp. 78-88.)

The materials, utensils, formulas for making, and orchard tests of soluble oils for use in controlling injurious insects are presented in this bulletin.

The Blue Grass of Southwest Virginia. By W. B. Ellett. (Bulletin 180, pp. 90-96.)

This bulletin presents analyses of the blue grass grown in southwest Virginia as a result of investigations to determine the real basis of the claim that the grass in this region is superior to any similar grass grown in the United States for finishing cattle without grain for export trade.

Dates of Seeding Winter Grains. By T. B. Hutcheson. (Circular 3, pp. 8, figs. 2.)

This circular gives the results of experiments to determine the best dates for seeding winter wheat, oats, rye, and barley in Virginia.

Selecting Seed Corn. By L. Carrier. (Circular 4, pp. 2-12, figs. 3.)

Directions for the selection of seed corn with a view of increasing the corn yield of the State are given in this circular.

Sugar Beets in 1908. By W. B. Ellett. (Circular 5, pp. 11.)

Analyses of sugar beets grown in different counties of the State as a result of tests to determine the feasibility of beet growing in Virginia for sugar production are presented in this circular.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Construction and Filling of Silos. By W. A. Linklater. (Popular Bulletin 10, pp. 8, figs. 11.)

This circular presents information with a view to advising dairymen and others regarding the construction and filling of silos.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Vaccination Against Tuberculosis in Cattle with Bovovaccine. By H. L. Russell and C. Hoffmann. (Bulletin 165, pp. 3-13.)

This bulletin describes the origin and nature of bovovaccine, its methods of

use, and gives the results of tests made to determine the effectiveness of this vaccine on a tuberculous herd in Wisconsin.

Spraying Potatoes Against Blight and the Potato Beetle. By E. P. Sandsten and J. G. Milward. (Bulletin 168, pp. 3-27, figs. 13.)

The results of experiments made on a total of 203 acres to determine (1) whether early potato blight (*Alternaria solani*) can be controlled by the application of Bordeaux mixture; and (2) to determine whether spraying should be recommended to the potato grower as a profitable investment and insurance against blight. Directions are also given to farmers for the proper method of spraying potatoes.



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U. S. Dep't of Agriculture,
ANSWERED.....

Issued March 15, 1909.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING FEBRUARY, 1909.

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ALABAMA CANE BRAKE STATION, Uniontown, F. D. Stevens, Director in Charge.

Fertilizer Tests with Cotton. Cover Crops. Alfalfa Yields. By F. D. Stevens. (Bulletin 26, pp. 3-20.)

The results of fertilizer experiments with cotton in 1908, including the effects of cover crops on yield of crop and maintenance of soil fertility, are presented in this bulletin.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Forest Survey of Litchfield and New Haven Counties, Connecticut. By A. F. Hawes and R. C. Hawley. (Bulletin 162, pp. 3-47, pls. 6.)

The chief object of this report is to arouse interest in the forest lands of Litchfield and New Haven counties, which may lead to the adoption of better methods of treatment, resulting in a steadily increasing production by the forest.

Commercial Feeding Stuffs. By E. H. Jenkins and J. P. Street. (Biennial Report, 1907-8, pt. 10, pp. 717-762.)

This gives the results of the chemical and microscopical examinations of 218 samples of feeding stuffs collected in the fall of 1908, and analyses of 55 samples sent in to the station by individuals.

DELAWARE STATION, Newark, H. Hayward, Director.

Report on Forest Conditions in Delaware and a Forest Policy for the State. By W. D. Sterrett. (Bulletin 82, pp. 3-58, figs. 10, map 1.)

This is a report of cooperative investigations conducted in 1907 by the United States Forest Service and the Delaware Station for the purpose of examining the forest conditions in the State and recommending practical measures for the management of the various classes of woodland.

Diseases of Field Crops in Delaware in 1907. By H. S. Jackson. (Bulletin 83, pp. 3-25, figs. 12.)

This bulletin aims to present in brief form a popular account of some of the more prevalent field crop diseases observed during the year of 1907 in Delaware, as well as brief mention of some new and interesting diseases which deserve attention, or which are noteworthy on account of their prevalence.

Annual Report of the Director for the Fiscal Year ending June 30, 1908. By H. Hayward. (Bulletin 84, pp. 3-12.)

This consists of the annual report of the director reviewing the work and expenditures of the station for the fiscal year ended June 30, 1908, and setting forth the needs of the station.

IDAHO STATION, Moscow, H. T. French, Director.

Planting Apple Orchards in Idaho. By J. R. Shinn. (Bulletin 64, pp. 3-37, pls. 11, maps 2.)

The purpose of this bulletin is to give advice to new settlers in the State who contemplate starting apple orchards, and to furnish information regarding the culture of apples which the experience of horticulturists has demonstrated to be practical and useful.

Alaska Wheat Investigation. By H. T. French and J. S. Jones. (Bulletin 65, pp. 3-12.)

This bulletin gives data regarding the culture of this variety of wheat and the results of flour tests made by the station.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Market Classes and Grades of Sheep. By W. C. Coffey. (Bulletin 129, pp. 577-635, figs. 47.)

The purpose of this bulletin is to define and illustrate the various classes and grades of sheep as recognized on the Chicago and other large markets, and is presented with the hope that it will be of value to those engaged in growing and handling sheep.

INDIANA STATION, Lafayette, A. Goss, Director.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 9-97, fig. 1, dgms. 3.)

This contains the usual report by the director reviewing the work of the station during the year, the reports by the department officers, lists of publications received, and of bulletins and circulars issued by the station, and a financial statement to June 30, 1908.

MAINE STATION, Orono, C. D. Woods, Director.

Fertilizer Inspection. By C. D. Woods. (Bulletin 160, pp. 275-310.)

This bulletin contains the analyses of the samples of commercial fertilizers collected by the station in the spring of 1908.

The Saddled Prominent (*Heterocampa guttivitta*). By Edith M. Patch. (Bulletin 161, pp. 311-350, pls. 8, fig. 1.)

This bulletin gives the results of investigations on a caterpillar outbreak of this species in 1907 and 1908, with descriptive notes on this insect, its natural enemies, and means of control.

Insect Note for 1908. By Edith M. Patch. (Bulletin 162, pp. 351-368, pls. 9.)

"This bulletin contains brief accounts of the more important insects of the year 1908."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Inspection of Commercial Fertilizers for the Season of 1908. By H. D. Haskins, L. S. Walker, and J. C. Reed. (Bulletin 127, pp. 3-68.)

This bulletin presents the results of analyses of commercial fertilizers sold in Massachusetts during the season of 1908. It briefly discusses the essential constituents of fertilizers and the sources from which they are derived. Retail cash prices and valuations are given, and the selection and purchase of high-grade fertilizers recommended. Summaries show the general condition of the fertilizer industry.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 241, pp. 4.)

This is a summary for January, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Spraying Calendar. By L. R. Taft and R. S. Shaw. (Special Bulletin 45, folio.)

Methods of preparing and using the best insecticides and fungicides, together with the time of application on the more important fruit and vegetable crops, are presented in this bulletin.

Report of the South Haven Substation for 1907. By L. R. Taft and F. A. Wilken. (Special Bulletin 46, pp. 3-14.)

The work of the substation with small and orchard fruits, grapes, nuts, etc., is presented in this bulletin.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 115-410, figs. 78.)

This contains a financial statement, a report by the director reviewing the work of the station during the year, reports by the heads of departments setting forth the most important lines of work, a record of meteorological observations, and reprints of Bulletins 248-251 and Special Bulletins 38, 39, 42, 43, 45, and 46.

MINNESOTA STATION, St. Anthony Park, St. Paul, J. W. Olsen, Director.

The Apple-Leaf Hopper and Other Injurious Insects of 1907 and 1908.

By F. L. Washburn. (Bulletin 112, pp. 146-254, pl. 1, figs. 67.)

This bulletin gives the results of investigations for two years on the life history, habits, and means of controlling the apple-leaf hopper, and discusses other injurious insects prevalent in the State in 1907 and 1908, including notes on a large number of destructive shade-tree pests, experiments in controlling the cabbage maggot, two years' work in spraying with suggested remedies for orchard and garden pests, a study of crown gall on raspberries, the irritating harvest mite or "jigger," the destruction of lawns by the white grub, and two enemies of bee keepers—the bee moth and American foul brood.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Scale Insects of the Orchards of Missouri. By E. P. Taylor. (Bulletin 18, pp. 7-87, pls. 4, figs. 22.)

This bulletin gives "a description of the appearance, life history, habits, damage, distribution, natural enemies, food plants, and control of the principal scale insects commonly infesting orchard property in Missouri."

Remedies for the San José Scale. By E. P. Taylor. (Circular 3, pp. 4.)

Directions for the preparation and use of various insecticides for the control of this pest are presented in this circular.

Homemade Oil Emulsion. By E. P. Taylor. (Circular 4, pp. 3.)

This circular gives directions for the preparation and use of a homemade oil emulsion on orchard trees.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Dry Farming Investigations in Montana. By A. Atkinson and J. B. Nelson. (Bulletin 74, pp. 65-89, pls. 10, map 1.)

Investigations to determine some of the farming possibilities of the nonirrigated level lands in the semiarid regions of Montana were begun by the station in 1905, and this bulletin presents the dry farming data that have been secured in experiments with a few of the most promising crops during the past four years.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Annual Report of the Board of Control, the Director, and the Members of the Station Staff for the Fiscal Year ending June 30, 1907. (Bulletin 63, pp. 57, pls. 5.)

This contains the usual reports by the director, treasurer, and department officers reviewing the work of the station during 1907.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

The House Mosquito, a City, Town, and Village Problem. By J. B. Smith. (Bulletin 216, pp. 3-21, pls. 2, figs. 7.)

The life history of the common house mosquito (*Culex pipiens*) is described in this bulletin, attention is called to its ordinary breeding places, and a detailed account of remedial measures for controlling this pest are presented.

Analyses and Valuations of Commercial Fertilizers and Ground Bone. By C. S. Cathcart, V. J. Carberry, and C. L. Pfersch. (Bulletin 217, pp. 3-40.)

A portion of the results of the fertilizer inspection for 1908 was reported in Bulletin 215; the balance of the analyses, together with a discussion of the whole inspection, is reported in this bulletin.

Vegetable-fruit Seed Distribution for 1909. By B. D. Halsted. (Bulletin 218, pp. 3-28, pls. 4.)

The list of seeds offered by the station for free distribution in 1909, descriptive notes of each, and the conditions under which the distribution is made, are presented in this bulletin.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Peony. By J. E. Coit. (Bulletin 259, pp. 73-145, pls. 20.)

This bulletin gives a list of varieties of peonies which may be regarded as fairly authentic as regards nomenclature and description, and presents as a preliminary step the results of studies upon this group of plants. An extensive bibliography and descriptive list of varieties are included.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Sulphur Sprays for Blister-mite. By F. H. Hall. (Bulletin 306, popular edition, pp. 3-7.)

This is a popular account of the apple-leaf blister-mite and of experiments made in 1907 to control this pest.

Variety Test of Strawberries and Cultural Directions. By O. M. Taylor. (Bulletin 309, pp. 507-557, pls. 8, figs. 2.)

This bulletin reports the results of tests made with 89 varieties of strawberries grown at the station during 1907 and 1908, with brief cultural suggestions for growing this crop.

Director's Report for 1908. By W. H. Jordan. (Bulletin 310, pp. 559-579.)

This is a review of the administrative, investigational, inspection, and publication work of the station during the year 1908.

Potato Spraying Experiments in 1908. By F. C. Stewart, G. T. French, and F. A. Sirrine. (Bulletin 311, pp. 1-38.)

"This bulletin gives the results of the seventh year's work in the ten-year series of potato spraying experiments begun in 1902. During 1908 the experiments were conducted along the same lines as in previous years. Twenty-seven separate experiments are reported."

The Tussock Moth in Orchards. By W. J. Schoene. (Bulletin 312, pp. 39-49, pls. 3.)

This bulletin discusses the economic importance of the Tussock moth, its biology and life history, and means of controlling this pest.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Feeding Experiments with Cows and Calves. By J. Michels. (Bulletin 199, pp. 5-16.)

The tests reported in this bulletin included: (1) A comparison of cotton-seed hulls and shredded corn stover for milk production; (2) a test of corn meal *v.* a mixture of corn meal and dried brewers' grains as a supplement to cotton-seed meal for milk production; and (3) a test of rolled oats as a partial substitute for milk in calf feeding.

OHIO STATION, Wooster, C. E. Thorne, Director.

Second Annual Report on Forest Conditions in Ohio. By W. J. Green. (Bulletin 200, pp. 107-126, map 1.)

This bulletin discusses the different lines of forestry work pursued during the year ended November 15, 1908, including a financial statement of the cost of the work and recommendations for its extension in the future.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Shelter Tent Experiments with Sumatra-type Tobacco. By W. Frear. (Bulletin 89, pp. 3-14, figs. 2.)

The experiments reported in this bulletin on the culture of Sumatra tobacco under shade were made "to ascertain how far seasonal differences might affect the quantity and quality of the leaf, how far the defects observed might be diminished by modifications in the selection and culture of the plants; and also to ascertain more accurately the cost of producing such leaf."

TEXAS STATION, College Station, H. H. Harrington, Director.

The Foul Brood of Bees and the Foul-brood Law. By G. W. Herrick and E. E. Scholl. (Bulletin 116, pp. 3-10.)

This bulletin discusses the nature and treatment of this disease and presents the text of the State foul-brood law.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Commercial Fertilizers. By J. H. Stewart and B. H. Hite. (Bulletin 118, pp. 265-318.)

This bulletin contains a complete report of the fertilizer inspection work in the State during the year ended December 31, 1908.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The King System of Ventilation. By C. A. Ocock. (Bulletin 164, pp. 3-24, figs. 21.)

This bulletin gives detailed plans for installing the King system of ventilation in barns.

Progress in Wisconsin Horse Breeding. By A. S. Alexander. (Bulletin 169, pp. 3-56.)

This bulletin contains a directory of owners of stallions and jacks licensed in 1908, with notes on the operation of the Wisconsin stallion law upon the horse-breeding industry of the State.

United States Department of Agriculture

OFFICE OF EXPERIMENT STATIONS,

RECEIVED

A. C. TRUE, Director.

MAY 14 1909
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U. S. Department of Agric

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MARCH, 1909.

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ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

The San José Scale and Lime-Sulphur Wash. By W. E. Hinds. (Bulletin 144, pp. 3-22, pl. 1, figs. 3, map 1.)

Notes are given in this bulletin on the distribution, nature, and control of the San José scale in Alabama.

Local Fertilizer Experiments with Cotton in 1905, 1906, 1907, and 1908.

By J. F. Duggar. (Bulletin 145, pp. 25-78.)

This bulletin reports the results of fertilizer experiments and soil tests to ascertain the best fertilizer or combination of fertilizers for cotton growing on each of the principal soils of Alabama.

ARKANSAS STATION, Fayetteville, C. F. Adams, Acting Director.

The Deposition of Fat and Lean in Hogs. By R. R. Dinwiddie and A. K. Short. (Bulletin 103, pp. 237-250, figs. 9.)

The purpose of the tests reported in this bulletin was to make a comparison of the capability of hogs of the lard and bacon type in the utilization of wide and narrow rations.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 5-16.)

This contains the customary reports by the director and station officers reviewing the different lines of work conducted during the year, together with a financial statement to June 30, 1908.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

The Sources of Agricultural Lime for Connecticut. By E. H. Jenkins and E. M. East. (Bulletin 163, pp. 3-18.)

This bulletin discusses the sources, composition, and prices of agricultural lime and presents notes on its action in the soil.

Eighth Report of the State Entomologist, 1908. By W. E. Britton.

(Biennial Report, 1907-8, pt. 11, pp. VIII + 763-848, pls. 18, figs. 12.)

This contains a report on the chief lines of work conducted by the State entomologist during 1908 in the study of the life history, habits, and means of controlling the injurious insect pests prevalent in the State during the year.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Proprietary and Homemade Miscible Oils for the Control of the San José Scale. By C. D. Jarvis. (Bulletin 54, pp. 169-197, fig. 1.)

This bulletin supersedes Bulletin 49 of the station and furnishes additional information with regard to the home manufacture of miscible oil; it throws some light on the various commercial "soluble oils," of which many new brands have recently been introduced; and reports the results of experiments in oil spraying in various sections of Connecticut.

Infection and Preservation of Eggs. By G. H. Lamson, jr. (Bulletin 55, pp. 203-214, figs. 7.)

This bulletin reports bacteriological studies with reference to the cause of decomposition and sources of infection of eggs, the part played by temperature and precautions to be observed in preserving eggs, and the use of water glass for this purpose.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Steer Feeding. By J. M. Scott. (Bulletin 96, pp. 29-37, figs. 8.)

The experiments reported in this bulletin were conducted for the purpose of securing information on the following points: (1) What combination of Florida feeds will give the best results for beef production; (2) what will be the cost of producing a pound of gain; (3) how long a feeding period is required to fatten Florida-grown cattle for the local market; and (4) what average daily gain in weight should the Florida feeder expect?

Whitefly Studies in 1908. By E. W. Berger. (Bulletin 97, pp. 43-71, figs. 18.)

This bulletin includes a revision of Bulletin 88 of the station, and gives detailed information concerning the life history and means of controlling the whitefly, with particular reference to the use of parasitic fungi.

Scaly Bark of Citrus. By H. S. Fawcett. (Bulletin 98, pp. 75-80, figs. 2.)

Notes are given in this bulletin on the nature, destructiveness, and control of the scaly bark disease of citrus fruits in Florida.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Sugar Corn and Tomatoes. By T. H. McHatton. (Bulletin 82, pp. 175-207, figs. 14.)

The results of tests in the culture of varieties of sweet corn and tomatoes with a view of determining their value and profitableness as truck crops in the State are presented in this bulletin. Notes are also given on the diseases and pests affecting these crops.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Sheep Industry from the Market Standpoint. By W. C. Coffey. (Circular 125, pp. 16, figs. 3.)

This circular gives information concerning the location and development of the principal sheep markets in the United States, the nature of the supply of sheep received at the Chicago market, factors to consider in handling sheep and lambs intended for market, shipping sheep and lambs to market, and the purchasing of feeders and breeding sheep on the open market.

Food Requirements of Growing and Fattening Swine. By W. Dietrich. (Circular 126, pp. 18, chart 1.)

The purpose of this circular is to present some deductions from the results of feeding and digestion experiments with pigs conducted by the station since 1904.

Shall We Use Natural Rock Phosphate or Manufactured Acid Phosphate for the Permanent Improvement of Illinois Soils? By C. G. Hopkins. (Circular 127, pp. 23.)

This circular reviews the work of several experiment stations in testing the fertilizing value of natural rock phosphate for the maintenance and improvement of soil fertility.

Abstract of the Proceedings of the Conference on Animal Tuberculosis at the University of Illinois, October 15, 1908. (Circular 128, pp. 16.)

INDIANA STATION, Lafayette, A. Goss, Director.

The Small Fruits. By J. Troop. (Bulletin 128, pp. 219-230.)

Information concerning the culture and varieties of strawberries, raspberries, blackberries, dewberries, currants, and gooseberries is presented in this bulletin.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 3-46.)

This contains reports by the director and heads of departments reviewing the work of the different stations during the year, together with financial statements.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Inspection of Commercial Feed Stuffs. By P. H. Smith and P. V. Goldsmith. (Bulletin 128, pp. 3-56.)

"This bulletin contains the analyses of commercial feed stuffs found in the Massachusetts markets during the year 1908, together with such comments as are called for by the results of the inspection. Topics of especial importance are grain screenings in feed stuffs, and complete rations for dairy stock. In addition will be found a tabulated list of the wholesale cost of feeding stuffs for the year."

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 242, pp. 4.)

This is a summary for February, 1909.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Varieties of Cotton, 1908. By W. R. Perkins. (Bulletin 116, pp. 6.)

The results of tests with varieties of cotton grown at the station in 1908 are reported in this bulletin.

Cotton Culture in Mississippi. By W. L. Hutchinson. (Bulletin 117, pp. 6.)

"The object of this bulletin is to put into the hands of Mississippi farmers such data as will enable them to produce a good early crop of cotton in weevil-infested areas."

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Seepage and Drainage. By E. T. Tannatt and R. D. Kneale. (Bulletin 76, pp. 111-162, pls. 14, figs. 2.)

This bulletin discusses the methods of draining wet lands in the State which have resulted in failure, the purpose of the investigations being (1) "to ascertain what the cause of the trouble was, where it originated, and what percentage of the difficulty was chargeable to the farmers and what to other causes; (2) to devise some better and more economical method for draining wet lands; and (3) to ascertain the relative rates of seepage in different classes of soil, and to devise a more economical method of stopping the seepage losses from canals and irrigation ditches."

NEVADA STATION, Reno, J. E. Stubbs, Director.

The Mt. Rose Weather Observatory, 1906-7. By J. E. Church, jr. (Bulletin 67, pp. 7-36, pls. 28, map 1.)

An account is given of the progress made in erecting the observatory and installing the necessary instruments, and a report is made of meteorological observations made on Mount Rose during the year 1906-7, and in the form of footnotes appropriately appended are given the more important facts for the year 1907-8.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

The First Season with the Peach Orchard. By M. A. Blake. (Bulletin 219, pp. 3-27, pls. 10, dgm. 1.)

This bulletin discusses the extent of the peach industry in the State and gives the results of the first year's work with the new peach orchard planted by the station with the object of demonstrating the profitableness of peach growing from the commercial point of view.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Third Report on the Influence of Manures on the Yield of Timothy Hay.

By J. A. Bizzell and J. O. Morgan. (Bulletin 261, pp. 259-276, figs. 22.)

This bulletin reports the results of fertilizer tests with timothy since 1906 grown in a six-year rotation consisting of corn, oats, wheat, and timothy three years, the work being supplementary to that previously reported in Bulletins 232 and 241 of the station.

Necrosis of the Grapevine. By D. Reddick. (Bulletin 263, pp. 323-343, figs. 17.)

This bulletin is a preliminary report on necrosis of the grapevine in New York State and is issued to call attention to the disease, to obtain further information regarding the manifestations of the disease, and to suggest such preventive measures as seem most likely to be of value.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Paying for Milk at Cheese Factories. By F. H. Hall. (Bulletin 308, popular edition, pp. 7.)

This is a popular edition of Bulletin 308 of the station which discusses in detail the various methods proposed for the purpose of paying for milk at cheese factories in the State.

Twenty-sixth Annual Report, 1907. (Annual Report, 1907, pp. IX+456, pls. 25, fig. 1.)

This contains reports by the treasurer, director, and station officers on the work of the station during the year, meteorological records from 1883 to 1907, inclusive, and an index to the annual reports of the station from 1882 to 1906, inclusive.

The Grapes of New York. By U. P. Hedrick et al. (Annual Report, 1907, pt. 2, pp. XV+564, pls. 101.)

This is the second volume in the series of fruit publications issued by the station and embodies the result of years of observations by the members of the station staff, together with information from practical grape growers in the State. The work is presented as a reliable guide to all the varieties of grapes that are likely to meet the attention of New York grape growers, the varieties being illustrated by means of colored plates.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Thirty-first Annual Report, 1908. (Annual Report, 1908, pp. 188, figs. 63.)

In addition to the usual reports by the director and the heads of departments, this contains reprints of Bulletins 197-199 and Press Bulletin 17 of the station, and scientific papers on the following topics: Experiments upon the effect of formalin upon the germination of oats; a study of corn mold; nitrification in soils and in solutions; the colorimetric determination of nitrates in soil solutions containing organic matter; and notes on plant diseases occurring in North Carolina.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Pork Production Under North Dakota Conditions. By W. B. Richards. (Bulletin 83, pp. 797-831, figs. 16.)

This bulletin discusses the practicability of raising pigs in North Dakota, the methods and practices discussed being based upon the results secured at the station and upon the results of the experience of some of the best farmers in the State.

OHIO STATION, Wooster, C. E. Thorne, Director.

Spring Practice in Economic Zoology. By H. A. Gossard. (Bulletin 198, pp. 15-88+VIII, figs. 10.)

This bulletin gives detailed information concerning the more important insect pests of the farm, orchard, and garden, with particular reference to means of control.

Calendar for the Treatment of Plant Diseases and Insect Pests. By W. J. Green, A. D. Selby, and H. A. Gossard. (Bulletin 199, pp. 89-102.)

This bulletin is a revision of Bulletin 147 of the station, and presents directions for the preparation and use of the more important fungicides and insecticides, the plant diseases and insects for the control of which they are best suited, and the best methods of seed and soil treatment.

The Mineral Elements in Animal Nutrition. By E. B. Forbes. (Bulletin 201, pp. 129-172.)

This bulletin presents the more important facts known to physiologists regarding the functions of mineral elements in animal nutrition, for the purpose of supplying to the student of agriculture an introduction to this important though somewhat unfamiliar subject.

A Visitor's Guide to the More Important Features of the Station's Work. By F. H. Ballou. (Circular 85, pp. 54, figs. 60.)

This is a revised edition of Circular 56, designed more particularly to serve as a medium through which every citizen of Ohio, who is in any measure identified with or interested in the tilling of the soil, may gain a comprehensive idea of the general character and scope of the scientific work in agriculture at the station. Many typical and striking scenes relating to the work of the station are illustrated.

Papers Read at the Summer Meeting of the Ohio State Horticultural Society held at Gypsum, Ohio, August 12, 1908, in the Orchards of Mr. William Miller. (Circular 87, pp. 13.)

The topics discussed are as follows: The renewal of an apple orchard, by S. R. Gill; spraying for apple scab in 1908, by A. D. Selby; combating pear blight, by R. A. Hunt and Wm. Miller; and experimental notes of the season, by H. A. Gossard.

Recent Experiments with Oats. By C. G. Williams. (Circular 88, pp. 8.)

This circular reports comparative tests with different varieties of oats, together with a description of the same relative to length of season, stiffness of straw, character of panicle, and color of grain; the use of northern-grown seed; the relation of rate of seeding to yield, and tests of a few varieties of barley, spring wheat, and emmer.

OKLAHOMA STATION, Stillwater, J. A. Craig, Director.

Alfalfa in Oklahoma. By L. A. Moorhouse and W. L. Burlison. (Bulletin 82, pp. 3-29, figs. 8.)

Directions are presented in this bulletin for the culture of alfalfa in Oklahoma, including the returns from this crop at the station for the four years 1902-1905, inclusive.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Soil Fertility. By T. F. Hunt. (Bulletin 90, pp. 3-26, charts 7.)

This bulletin gives the results of fertilizer experiments in a rotation consisting of corn, oats, wheat, and hay, conducted by the station during the past twenty-five years.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Treatment of Plant Diseases and Injurious Insects in South Carolina.

By H. W. Barre and A. F. Conradi. (Bulletin 141, pp. 3-52, fig. 1.)

This bulletin discusses the spray pump and its equipment and the preparation and use of fungicides and insecticides and gives notes on the fungus diseases and insects affecting various plants grown in the State.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Report of Progress in Variety Tests of Oats. By C. Willis. (Bulletin 110, pp. 421-450, figs. 2.)

The object of this bulletin is to report the progress of variety and cultural work with oats, conducted at the station since 1899.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Tick Eradication. By E. C. Cotton. (Bulletin 81, pp. 53-71, figs. 7.)

This bulletin gives the life history and habits of the North American fever tick with special reference to eradication.

The Soy Bean; A Comparison with the Cowpea. By C. A. Mooers. (Bulletin 82, pp. 75-104, figs. 14.)

This bulletin gives the results of experiments in testing the value of varieties of soy beans and cowpeas as farm crops, including notes on their value as green manures and as hay crops. Directions are given for the culture and harvesting of these crops.

TEXAS STATION, College Station, H. H. Harrington, Director.

Fertilizer and Irrigation Experiments with Onions. By S. A. Waschka. (Bulletin 115, pp. 5-16.)

This bulletin reports results in regard to the growth, cultivation, harvesting, and marketing of the onion crop.

Commercial Feeding Stuffs in 1907-8. By J. W. Carson and G. S. Fraps. (Bulletin 117, pp. 5-67.)

This bulletin presents the text of the law regulating the sale of feeding stuffs in the State and the results of inspection work by the station during the year 1907-8.

Report of Progress with Citrus Fruits. By S. A. Waschka. (Bulletin 118, pp. 3-11, figs. 6.)

This bulletin was prepared with a view of meeting the heavy demands made upon the superintendent and director of the Beeville Substation for information concerning citrus fruit culture in south and southwest Texas, and gives information regarding the preparation of the land, planting the trees, and the culture of varieties of citrus fruits.

Infectious Anemia of the Horse. By M. Francis and R. P. Marsteller. (Bulletin 119, pp. 3-19, figs. 8, dgm. 1, charts 5.)

This is a preliminary report on the symptoms and post-mortem examination of a number of horses and mules affected with infectious anemia.

Corn and Cotton Experiments for 1908. By W. C. Welborn. (Bulletin 120, pp. 3-16.)

The experiments reported in this bulletin were conducted with a view to throwing some light on methods of preparing the land, depths of plowing, fertilizer requirements of the soils and crops, and variety tests of corn and cotton.

VIRGINIA TRUCK STATION, Norfolk, T. C. Johnson, Superintendent.

Treatment for Scab and Early Blight on Potatoes, Mildew on Cucumbers and Cantaloupes. By T. C. Johnson. (Circular 1, pp. 2-8.)

Notes are given on the nature of these diseases, and on the preparation and use of fungicides for their control.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Raspberries, Blackberries, and Loganberries in Washington. By W. S. Thornber. (Bulletin 87, pp. 3-32, figs. 17.)

This bulletin gives directions for the culture, harvesting, and marketing of raspberries, blackberries, dewberries, and loganberries in Washington, the information having been gathered from the experience of successful berry growers in the State as well as from the berry plantation on the station farm.

The Care of Milk on the Farm. By I. P. Whitney. (Popular Bulletin 12, pp. 4.)

Notes on the care and handling of milk on the farm, with particular reference to the prevention of its souring and contamination, are presented in this circular.

Washington State College Spraying Calendar for 1909. By R. K. Beattie and A. L. Melander. (Popular Bulletin 13, folio.)

Directions for the preparation and use of a number of insecticides and fungicides are presented in this bulletin.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Disinfection and Commercial Disinfectants. By M. P. Ravenel and K. W. Smith. (Bulletin 166, pp. 3-19, figs. 9.)

This bulletin gives directions for the preparation and use of disinfectants and reports the results of tests to determine the germicidal properties of a number of commercial disinfectants.

WYOMING STATION, Laramie, J. D. Towar, Director.

Eighteenth Annual Report, 1908. (Annual Report, 1908, pp. 94, figs. 2.)

This contains the usual reports by the director and heads of departments summarizing the work of the station during the year, a financial statement, and a meteorological summary for the year 1907.

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U. S. Department of Agriculture

Issued May 11, 1909.

Answered
United States Department of Agriculture,
OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

**LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF
EXPERIMENT STATIONS DURING APRIL, 1909.**

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Citrus Culture in the Arid Southwest. By J. E. Coit. (Bulletin 58, pp. 289-328, figs. 9.)

This bulletin discusses the conditions under which citrus fruits can be grown in the arid Southwest, their propagation and planting, stocks for citrus trees, orchard treatment, the botany of citrus plants, insects injurious to citrus trees, diseases of citrus trees, and crop-pest inspection laws.

Nineteenth Annual Report, 1908. (Annual Report, 1908, pp. 323-382, figs. 2, dgm. 1.)

This gives the administrative and financial reports of the station for 1908, with reports by the heads of departments reviewing the different lines of work conducted by the station during the year.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Australian Saltbush (*Atriplex semibaccata*); Its Composition and Digestibility. Notes on Russian Thistle. By W. P. Headden. (Bulletin 135, pp. 3-16.)

Notes are given in this bulletin on the experience of the station in the culture of the saltbush, on feeding experiments to determine the digestibility of this plant both green and dried, and of the composition of the Russian thistle which is sometimes used as a forage plant.

Dewberry Growing. By O. B. Whipple. (Bulletin 136, pp. 3-8.)

The purpose of this bulletin is to outline the methods of dewberry and loganberry culture practiced by successful growers in Colorado, with directions for picking and packing the fruit for market.

Some Animal Diseases. By G. H. Glover, C. L. Barnes, and B. F. Kaupp. (Bulletin 137, pp. 3-12.)

This bulletin gives information of importance and practical value to stockmen of the State regarding sore mouth disease of pigs and calves, lip and leg ulceration or necrotic dermatitis of sheep, poisonous weeds, blackleg, glanders, foot-and-mouth disease, and hog cholera.

Some Bacterial Diseases of Plants. By W. G. Sackett. (Bulletin 138, pp. 3-23.)

This bulletin calls attention to bacterial disease of alfalfa, pear blight, soft rot of sugar beets, black rot of cabbage, bacterial blight of potatoes, tomatoes, eggplants, and tobacco, bacteriosis of beans, and wilt of cucumbers, cantaloupe, and squash, which are either present in the State or expected in the future. Suggestions are also made for the control of those diseases for which remedies are known.

Pruning Mature Fruit Trees. By O. B. Whipple. (Bulletin 139, pp. 3-20, figs. 15.)

This bulletin discusses the principles of pruning and makes suggestions for the proper pruning of apples, apricots, cherries, peaches, pears, plums, and quinces. Notes are given on thinning fruit with particular reference to apples, pears, and peaches.

Strawberry Growing in Colorado. By B. O. Longyear. (Bulletin 140, pp. 3-12.)

This bulletin presents the methods practiced by many of the most successful strawberry growers in localities where the industry is conducted on a commercial scale in the culture, handling, and marketing of the fruit. Notes are also presented on the varieties adapted to the State.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 245-255.)

This contains reports by the State commissioner of agriculture and of the director reviewing the work of the station, and a financial statement to June 30, 1908.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Experiments with Repellents against the Corn Root-Aphis, 1905 and 1906. By S. A. Forbes. (Bulletin 130, pp. 3-28.)

The results of experiments for the control of this pest, together with notes on the natural conditions tending to check its spread, are presented in this bulletin.

Habits and Behavior of the Cornfield Ant (*Lasius niger americanus*). By S. A. Forbes. (Bulletin 131, pp. 31-45, fig. 1.)

A study of the life history and habits of this ant is given in this bulletin.

The Effect of Selection upon Certain Physical Characters in the Corn Plant. By L. H. Smith. (Bulletin 132, pp. 51-62, figs. 5.)

This bulletin reports the results of experiments in breeding corn to modify certain physical characters in the plant; namely, (1) height of ear on stalk, and (2) declination of ear from stalk.

Ear Rots of Corn. By T. J. Burrill and J. T. Barrett. (Bulletin 133, pp. 65-109, pl. 1, figs. 21.)

Descriptions are given of four groups of parasitic fungi which produce ear rots of corn, the results of inoculation experiments, notes on means of prevention, and a history and synonymy of the Diplodia disease.

INDIANA STATION, Lafayette, A. Goss, Director.

Results of Cooperative Tests of Varieties of Corn, Wheat, Oats, Soy Beans, and Cowpeas, 1908. By A. T. Wiancko and C. O. Cromer. (Bulletin 132, pp. 469-500, fig. 1.)

This bulletin contains a summary of the results of comparative tests of leading varieties of corn, winter wheat, oats, soy beans, and cowpeas conducted under the direction of the station by farmers in various parts of the State during 1908.

Commercial Fertilizers. By W. J. Jones, Jr., et al. (Bulletin 133, pp. 503-587.)

This bulletin summarizes the inspection work with fertilizers for the past seven years, with a detailed report of the inspection for 1908, including analyses of 901 samples.

IOWA STATION, Ames, C. F. Curtiss, Director.

The Lesser Apple Leaf-Folder (*Peronea minuta*). By R. L. Webster. (Bulletin 102, pp. 181-212, figs. 13.)

The habits, life history, natural enemies, and preventive measures for the control of the lesser apple leaf-folder are presented in this bulletin.

The Use of Starters in Butter Making. By F. W. Bouska. (Bulletin 103, pp. 217-229.)

This bulletin describes the nature and value of starters in cheese and butter making, and gives the results of experiments by the station in the use of starters during the past four years.

MAINE STATION, Orono, C. D. Woods, Director.

Finances, Meteorology, Index. (Bulletin 163, pp. 387-396+XII.)

This bulletin contains the summary of the meteorological observations, the report of the treasurer, the index for the bulletins issued in 1908, and the introduction to the annual report of the station.

Notes on Plant Diseases in 1908. By W. J. Morse. (Bulletin 164, pp. 28, pls. 2, chart 1.)

This bulletin discusses the prevalence of potato and orchard diseases of 1908, the development of scab upon limed potato soils, self-boiled lime-sulphur as a substitute for Bordeaux mixture for apple scab, weather records in relation to winter injury of fruit trees, crotch injury of apple trees caused by weather conditions, and the winter injury of white pine in 1908.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 243, pp. 4.)

This is a summary for March, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Can the General Farmer Afford to Grow Apples? and Suggestions on Improving and Spraying Apple Orchards. By S. B. Hartman and H. J. Eustace. (Bulletin 253, pp. 36-48, figs. 9.)

An account is given of the methods used and results secured with neglected orchards cared for in connection with general farming in Michigan.

MINNESOTA STATION, St. Anthony Park, St. Paul, J. W. Olsen, Director.

Potato Experiments and Studies at University Farm. Potato Growing for Minnesota. By A. R. Kohler. (Bulletin 114, pp. 287-362, figs. 6.)

The results of tests with 100 varieties of potatoes grown on the station farm in 1908, descriptions and notes on 63 of the more important varieties, a classification of varieties, the results of spraying experiments, directions for the culture and selection of potatoes, and directions for the control of the Colorado potato beetle are reported in this bulletin.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Pork Production at the Delta Station. By J. W. Fox. (Bulletin 107, rev. ed., pp. 7.)

This bulletin reports the results secured in the profitable raising of pigs at the Delta Station in 1908, with the details of management and the pasture rotation practiced which furnished grazing every day in the year.

**Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Bulletin 115, pp. 3-72.)**

The general results of the inspection of fertilizers for the season of 1907-8 are reported in this bulletin, including analyses of 526 samples.

Clearing Pine Lands. By E. B. Ferris. (Bulletin 118, pp. 3-11, figs. 3.)

Various methods of clearing the pine lands of stumps, including the cost of boring and burning the stumps, are reported in this bulletin.

Report of Work at the Delta Station for 1907-8. By J. W. Fox. (Bulletin 119, pp. 12.)

This bulletin summarizes the work of the station for three years with corn, hay crops, cotton, the use of fertilizers, and in drainage investigations.

**Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Circular 29, pp. 4-29.)**

This circular gives the analyses of the samples of fertilizers collected in the State during the season of 1908-9.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Inspection of Commercial Fertilizers. By P. F. Trowbridge. (Bulletin 82, pp. 3-30.)

This bulletin contains the results of the analyses of fertilizers collected during September and October, 1908, with a discussion of the results and a detailed statement of the receipts and disbursements of the fertilizer control fund for the year ended December 31, 1908.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Biennial Report, 1907-8. (Biennial Report, 1907-8, pp. 18, pls. 4.)

This contains a financial statement for the biennial period, and reports by the director, entomologist, and pathologist reviewing the work of the station during 1907 and 1908.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Sixth Annual Report of the State Entomologist of Montana. By R. A. Cooley. (Bulletin 75, pp. 89-112, pls. 2, fig. 1.)

This bulletin gives insectary notes on the habits of the wood tick (*Dermacentor* sp.), with a view of determining its relation to spotted fever in man, an account of a trip into West Gallatin canyon to study ticks, and notes on the life history of Glover's silk moth (*Samia gloveri*).

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Crop Production in Western Nebraska. Principles of Cultivation. By W. P. Snyder and W. W. Burr. (Bulletin 109, pp. 4-55, figs. 15.)

The results of culture experiments with varieties of wheat, oats, barley, emmer, corn, and forage crops grown at the North Platte substation in 1907 and 1908, are reported in part 1 of this bulletin. Part 2 discusses the tillage practices specially prominent in dry-land farming.

NEW HAMPSHIRE STATION, Durham, E. D. Sanderson, Director.

Analyses of Feeding Stuffs and Fertilizers. By F. W. Morse and B. E. Curry. (Bulletin 140, pp. 231-242.)

The results of analyses of the feeding stuffs and fertilizers collected in the course of inspection in 1908 are reported in this bulletin.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Nineteenth Annual Report, 1908. (Annual Report, 1908, pp. 58.)

This contains reports by the director and heads of departments, reviewing the different lines of station work during the year, and a financial statement to June 30, 1908.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. XXXVII + 265-492 + 68 + 24, figs. 158, dgms. 2.)

This contains the report of the director reviewing the work of the station during the year, a financial statement, and reprints of Bulletins 250-258 and Circulars 1-3, inclusive, of the station issued during the year.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Some Newer Strawberries. By O. M. Taylor. (Bulletin 309, popular ed., pp. 11.)

A popular edition of Bulletin 309, which reports the results of tests made with 89 varieties of strawberries grown at the station during 1907 and 1908, with brief cultural suggestions for growing this crop.

Inoculation and Lime as Factors in Growing Alfalfa. By H. A. Hard-
ing and J. K. Wilson. (Bulletin 313, pp. 51-75, pls. 2, maps 2.)

This bulletin gives the results of more than 100 cooperative experiments in the culture of alfalfa in different parts of the State, discussing the effects of inoculation, the effects of lime, and the combined influence of lime and inoculation on the yields of this crop.

Lime and Liming. By L. L. Van Slyke. (Circular 10, pp. 12.)

This circular furnishes information regarding the use of lime-containing materials on lands for the purpose of (1) neutralizing the acidity of soils, (2) producing other changes—chemical, biological, and physical, (3) supplying phosphorus to plants, or (4) furnishing calcium to plants.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Practical Painting Tests of 1907. By E. F. Ladd. (Bulletin 81, pp. 577-714, figs. 11, dgms. 8.)

This bulletin gives the results of paint tests conducted by the station in collaboration with paint firms and associations to determine the value of many kinds of pigments and combinations upon various woods and differently constructed fences.

OREGON STATION, Corvallis, J. Withycombe, Director.

Notes on Nut Culture. By C. I. Lewis. (Circular 3, pp. 3.)

Notes on the culture of varieties of walnuts, almonds, and filberts are given in this circular.

A Colony House. A Trapnest. By J. Dryden and A. G. Lunn. (Circular 4, pp. 7, figs. 2.)

This circular gives suggestions for the proper housing of poultry, the methods and cost of constructing colony houses, and a description of and directions for making a trapnest in use at the station.

PORTE RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Pineapple Growing in Porto Rico. By H. C. Henricksen and M. J. Iorns. (Bulletin 8, pp. 7-42, pls. 6.)

The results of experiments covering a number of years on the culture of pineapples in Porto Rico, with a comparison of methods and results in the West Indies and Florida, are presented in this bulletin.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Stomach Worm Disease of Sheep and Young Cattle. By M. R. Powers.
 (Bulletin 142, pp. 3-19.)

This bulletin discusses the extent of infestation of live stock by the stomach worm, and gives the life history of this pest, methods of treatment, and preventive measures.

Some Injurious Orchard Insects. By A. F. Conradi and W. A. Thomas.
 (Bulletin 143, pp. 3-35, figs. 15.)

Descriptions are given in this bulletin on the life history, habits, and means of controlling some of the more injurious orchard insects in the State, including the peach-tree borer, fruit-tree bark beetle, woolly aphis, San José scale, plum curculio, plum aphis, oyster-shell bark louse, green apple aphis, and codling moth.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Annual Report, 1908. (Annual Report, 1908, pp. 20.)

This contains reports by the director and heads of departments reviewing the different lines of station work during the year, and a financial statement to June 30, 1908.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Wormy Apples and How to Prevent Them. Results of Spraying for Codling Moth in 1908. By J. E. Buck. (Bulletin 181, pp. 3-13, figs. 9.)

In this bulletin the life history, habits, and means of controlling the codling moth are presented, together with the results of spraying experiments conducted by the station.

Improving the Corn Crop. By L. Carrier. (Circular 6, pp. 12, figs. 3.)

This bulletin gives directions for the selection, testing, grading, and culture of corn with a view to increasing the yield in Virginia.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Planting of the Apple Orchard. By W. S. Thornber. (Popular Bulletin 14, pp. 4, figs. 2.)

Notes are given in this bulletin on apple orchard planting for the purpose of furnishing information on this subject to prospective settlers and to others who desire to take up this work in the State.

Methods of Tillage for Dry Farming. By G. Severance. (Popular Bulletin 15, pp. 7, figs. 5.)

The purpose of this bulletin is to outline the essential features of successful tillage in the semiarid wheat belt of Washington, where the rainfall is only from 10 to 16 inches per annum.

The Sulphur-Lime Wash. By A. L. Melander and R. K. Beattie.
 (Popular Bulletin 16, pp. 4.)

This bulletin gives brief directions for the preparation and use of the lime-sulphur wash as an insecticide and fungicide.

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Issued June 10, 1909.

United States Department of Agriculture

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MAY, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

DELAWARE STATION, Newark, H. Hayward, Director.

Spraying for Brown-rot of the Peach, 1908. By C. A. McCue. (Bulletin 85, pp. 3-12.)

This bulletin gives the results of cooperative spraying experiments conducted by the station in 1908 for the control of peach brown-rot (*Sclerotinia fructigena*) by the use of self-boiled lime-sulphur mixture and other fungicides.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Annual Report, 1908. (Annual Report, 1908, pp. CXXX+XX, pls. 10.)

This contains the usual financial, executive, and departmental reports reviewing the work of the station during the year.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Use of Commercial Fertilizers. By C. G. Hopkins. (Circular 129, pp. 24, fig. 1.)

This is an address read before the Illinois State Farmers' Institute at Rockford, February 25, 1909, dealing with the need and use of fertilizers on Illinois soils.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Treating Seed-corn to Protect it from Burrowing Animals. By T. H. Scheffer. (Circular 1, pp. 4.)

The results of experiments in treating seeds with poisons and bad-flavored substances to protect them when planted against the depredations of moles, mice, and other animals are reported in this circular.

MAINE STATION, Orono, C. D. Woods, Director.

Poultry Notes, 1908. By R. Pearl and F. M. Surface. (Bulletin 165, pp. 29-48, figs. 5.)

The purpose of this bulletin is to present a brief report of the progress of the work of the station with poultry during the year 1908.

Data on the Inheritance of Fecundity Obtained from the Records of Egg Production of the Daughters of "200-egg" Hens. By R. Pearl and F. M. Surface. (Bulletin 166, pp. 49-84, figs. 4.)

This bulletin gives the results of experiments made in 1908 to determine what would be the egg production of the daughters of "200-egg" hens, when these daughters were accorded the same treatment as is given to other pullets.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Irish Potato Investigations. By C. P. Close and T. H. White. (Bulletin 132, pp. 151-173, figs. 7.)

The results of culture experiments with a number of varieties of home-grown and foreign-grown seed are reported in this bulletin, with cultural directions for the production of potatoes in Maryland.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 244, pp. 4.)

This is a summary for April, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Annual Report of the South Haven Substation for 1908. By L. R. Taft and F. A. Wilken. (Special Bulletin 48, pp. 3-24.)

The results of cultural and variety tests with small and orchard fruits and of tests with scale remedies are presented in this bulletin.

Inoculation with Nodule-forming Bacteria. By W. S. Sayer. (Circular 5, pp. 4, figs. 3.)

This circular gives brief notes on the value of nodules, method of inoculating seed with pure cultures, and the needs of inoculating leguminous plants for improving the yields.

MINNESOTA STATION, St. Anthony Park, St. Paul, J. W. Olsen, Director.

Hog Cholera and Hog Cholera Vaccine. By M. H. Reynolds. (Bulletin 113, pp. 255-284.)

This bulletin discusses the cause, symptoms, and post-mortem conditions of hog cholera, gives the results of vaccination experiments conducted at the station and on farms throughout the State, and makes suggestions concerning State and Federal control of this disease.

Seed Grain. A. Boss et al. (Bulletin 115, pp. 363-384, figs. 2.)

This bulletin discusses the cleaning and grading of grain, the treatment of seed for smuts, and the different varieties of grain, and gives notes on the distribution of seeds by the station in 1908.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Farmers' Institute Bulletin, 1907-8. By E. R. Lloyd. (Bulletin 120, pp. 80, figs. 7.)

This bulletin gives tabulated data as to the attendance at farmers' institutes in the State in 1906, 1907, and 1908, and a number of papers dealing with the culture of cotton in relation to the boll weevil, the culture of alfalfa and vetches, cheap pork production, profitable beef raising, the drainage of lands, the most important factor in diversification, successful truck farming, farm forestry, and diversified farming.

Inspection and Analyses of Commercial Fertilizers on Sale in the State. (Circular 27, pp. 3-27.)

Analyses of commercial fertilizers found on sale in the State during the season of 1908-9 are reported in this circular.

Inspection and Analyses of Commercial Fertilizers on Sale in the State. (Circular 28, pp. 4-23.)

Additional analyses to those reported in Circular 27 are given in this circular.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

American Varieties of Beans. By C. D. Jarvis. (Bulletin 260, pp. 153-255, pls. 17.)

This bulletin presents a correct nomenclature and a key to the present-day varieties of beans based upon the form and color of the fresh seed, and is intended to supply the bean fancier with technically accurate information of immediate value and service.

Experiments in the Growth of Clover on Farms Where It Once Grew but Now Fails. By J. H. Squires. (Bulletin 264, pp. 347-364, figs. 9.)

The results of experiments conducted by the station in 1907 are reported.

Soil Drainage and Fertility. By T. L. Lyon, G. W. Cavanaugh, and E. O. Fippin. (Circular 4, pp. 4.)

Notes are given in this circular on humus in soils, on the drainage, liming, and tillage of soils, and the efficiency of fertilizers.

Suggestions from a Survey of the Trucking Region of Eastern Long Island. By B. H. Crocheron. (Circular 5, pp. 5-12, fig. 1.)

This circular gives the results of a survey made on the truck farms of eastern Long Island from October 23, 1908, to January 18, 1909, for the purpose of obtaining a comprehensive estimate of agricultural conditions in the territory covered, and to secure statements concerning the methods and practices used on the farms with a view to their improvement.

Suggestions Concerning Treatment of Seed Corn with Deterrents Against Crows. By B. M. Duggar and M. M. McCool. (Circular 6, pp. 4.)

The results of tests made with coal tar, pine tar, oil of turpentine, anilin oil, and pyridin as means of preventing the destruction of seed corn by crows are presented in this circular.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Potato Spraying in Dry Seasons. By F. H. Hall. (Bulletins 307 and 311, popular edition, pp. 10.)

A popular summary of the potato spraying experiments conducted by the station in 1907 and 1908.

Orchards Injured by Tussock Moth. By F. H. Hall. (Bulletin 312, popular edition, pp. 5, figs. 5.)

A popular edition of Bulletin 312 which discusses the economic importance of the tussock moth, its biology and life history, and means of controlling this pest.

Two Factors Favoring Success with Alfalfa. By F. H. Hall. (Bulletin 313, popular edition, pp. 6.)

A popular summary dealing with the successful culture of alfalfa in New York.

A Comparison of Tillage and Sod Mulch in an Apple Orchard. By U. P. Hedrick. (Bulletin 314, pp. 77-132, pls. 8, dgm. 1.)

This bulletin is a preliminary report on experiments now being conducted by the station to determine whether the apple thrives better under tillage or in sod in New York.

A Mycosphaerella Wilt of Melons. By J. G. Grossenbacher. (Technical Bulletin 9, pp. 195-229, pls. 6.)

Historical and descriptive notes, together with the results of inoculation experiments on a wilt of muskmelons which was prevalent in New York during 1907 and 1908 are given in this bulletin.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Raspberry Byturus (*Byturus unicolor*). By W. H. Goodwin.
(Bulletin 202, pp. 173-186, figs. 8.)

Notes are given in this bulletin on the life history, habits, distribution, and means of controlling this insect pest of raspberries which has been very destructive in Ohio during the past two years.

Meetings of the Ohio State Horticultural Society. (Circular 89, pp. 19, figs. 2.)

Summaries of papers and addresses presented at the State fair meeting held at Columbus, September 2, 1908, dealing with some of the important horticultural problems of the year, and of the potato growers' meeting held at Tiffin, October 16, 1908, which gave field demonstration work with potato diggers, and papers on varieties of potatoes and potato seed selection and improvement.

Seasonal Report of Potatoes, 1908. (Circular 90, pp. 7, charts 5.)

Results for the season of 1908 in potato work and deductions therefrom, based on notes taken at the experiment station and reports received by the cooperative department from several hundred farmers representing every county in the State, are embodied in this circular.

Alfalfa Culture. By C. G. Williams. (Circular 91, pp. 8.)

Directions for the culture of alfalfa in Ohio are presented in this circular.

Apple Spraying in 1908. By H. A. Gossard. (Circular 95. pp. 8, figs. 8.)

A summary of the results obtained in spraying apple orchards in 1908 is presented in this circular.

OKLAHOMA STATION, Stillwater, J. A. Craig, Director.

Alfalfa Seed in Oklahoma. By L. A. Moorhouse and W. L. Burlison.
(Bulletin 83, pp. 3-23, figs. 25.)

As a result of the examination of more than 400 samples of alfalfa seed, part 1 of this bulletin gives directions for testing alfalfa seed for vitality and weed content, and part 2 gives descriptions of the more obnoxious weed seeds found in alfalfa and methods for the eradication of weeds.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Soil Fertilization. By J. P. Stewart. (Bulletin 91, pp. 3-18, figs. 4.)

Notes are given in this bulletin on the extent and basis of orchard fertilization and gives the results of fertilizer experiments now in operation in the State which were begun by the station in April, 1907.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

The Catalase of Soils. By D. W. May and P. L. Gile. (Circular 9, pp. 3-13.)

Experiments to determine the amounts of catalase in soils are reported in this circular together with a discussion of the effect of heat, carbon bisulphid, and manures upon the catalase content of soils.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Analyses of Commercial Fertilizers. By B. L. Hartwell, J. F. Morgan, and L. F. Whipple. (Bulletin 132, pp. 35-51.)

This bulletin, together with Bulletin 130, contains the analyses of the samples of commercial fertilizers collected during the year 1908.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 218-349+VIII, pls. 2, figs. 2.)

This contains the usual executive, departmental, and financial reports covering the work and expenditures of the station during the year, with special articles on the following topics: Sodium as a partial substitute for potassium, the relative toxicity of ferrous sulphate to barley and rye seedlings, mating experiment with bees, the crow as a menace to poultry raising, and methods of keeping pedigree records in use at the Rhode Island Agricultural Experiment Station.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Celery. By C. C. Newman. (Bulletin 144, pp. 5-24, figs. 9.)

Notes are given on a number of varieties of celery, and directions are given for soil preparation, culture, fertilizing, blanching, and marketing of this crop.

Fertilizer Experiments with Cotton. By J. N. Harper. (Bulletin 145, pp. 3-31, pls. 10.)

The object of this bulletin is to give the results of experiments that show that cotton can be produced cheaper than it is now being produced, by the judicious use of more commercial fertilizers, the rotation of crops, the use of farm manures, and the use of improved farming implements.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

A Study of South Dakota Butter with Suggestions for Improvements.

By C. Larsen and J. H. Shepard. (Bulletin 111, pp. 453-482.)

As a result of a cooperative butter contest held under the auspices of the State Dairy Association and the dairy department of the experiment station, this bulletin makes suggestions for stimulating interest in the making of an improved quality of butter in the State.

The Killing of Mustard and Other Noxious Weeds in Grain Fields by the Use of Iron Sulphate. By E. W. Olive. (Bulletin 112, pp. 485-498, figs. 3.)

The results of experiments conducted on several farms in 1908, with a discussion of the reasons why weeds are destroyed and grain only slightly injured, are presented in this bulletin.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Comparison and Improvement of Dairy Herds in Tennessee. By S. E. Barnes. (Bulletin 83, pp. 3-12, figs. 4.)

This bulletin discusses the value of improving the dairy herds of the State, gives a comparison of herds as determined by records, and points out the value of record keeping for determining the profitability or unprofitability of individual cows.

Sheep and Lambs in Tennessee. By F. C. Quereau. (Bulletin 84, pp. 15-24, map 1.)

This bulletin discusses the extent of lamb production in Tennessee for the early spring markets, and presents the methods of breeding and feeding practiced in different parts of the State.

Prevention of Hog Cholera. By M. Jacob. (Bulletin 85, pp. 27-31.)

The results of experiments conducted by the station for the control of an outbreak of hog cholera on one of the large farms of the State are reported in this bulletin.

Experiments with Soils, Fertilizers, and Farm Crops. By C. A. Mooers. (Bulletin 86, pp. 35-88.)

The results of two years' experimental work in determining the various soil types in middle Tennessee and the crops adapted to the different soils are reported in this bulletin.

Report of Cooperative and Extension Work in Agriculture in Middle Tennessee for the Years 1907-8. (Pp. 3-102, figs. 4, charts 5, maps 2.)

This contains a report by the director reviewing the cooperative experiments conducted during 1907 and 1908 in middle Tennessee with detailed reports of the work as previously reported in Bulletins 83-86, inclusive, of the station, and papers on orchard extension and the propagation of native varieties of fruits, the propagation of resistant clover, a report on tobacco insects, and a paper on the relation of the weather service to the farmer.

VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Feeding Stuffs. The Viability of Weed Seeds in Feeding Stuffs. By J. L. Hills, C. H. Jones, and C. L. Beach. (Bulletin 138, pp. 3-20, pls. 4.)

The results of feeding stuff inspection in 1908 are reported, together with the results of tests of the viability of weed seeds found in the feeds offered for sale in the State.

Preliminary Statement Regarding the Forestry Problems of Vermont.

By A. F. Hawes. (Bulletin 139, pp. 23-26, pl. 1.)

The purpose of this bulletin, which is Forest Service Publication No. 1, is to explain what forestry is, to outline the work of the State forester's office, and to give instructions regarding one of the most important branches of forestry, namely, forest planting.

Commercial Fertilizers. By J. L. Hills, C. H. Jones, and H. L. Miner. (Bulletin 140, pp. 39-60.)

This bulletin reports analyses of samples of fertilizers representing 56 brands found on sale in the State for the 1909 trade.

Apple Culture in Vermont. By W. Stuart. (Bulletin 141, pp. 63-100, pls. 8, fig. 1.)

The adaptability of Vermont for apple growing is discussed and directions for the laying out, culture, and care of orchards and the marketing of fancy apples are presented in this bulletin.

The Bulletins of the Fertilizer Control. By J. L. Hills. (Circular 1, pp. 4.)

This circular is issued to call attention both to the list of fertilizer bulletins available for distribution and also to the special features of these bulletins of advantage to farmers concerning the general subject of fertilization.

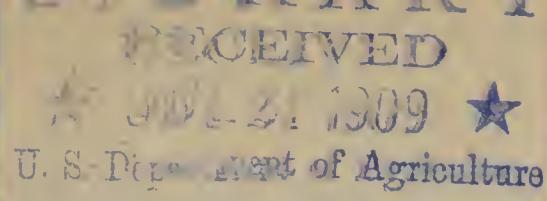
The Gipsy and Brown-tail Moths. By W. Stuart. (Circular 2, pp. 4, figs. 9.)

Notes on the economic significance of the gipsy and brown-tail moths and their means of distribution are given in this circular.

WYOMING STATION, Laramie, J. D. Towar, Director.

Dry Farming in Wyoming. By J. D. Towar. (Bulletin 80, pp. 3-29, figs. 3.)

This bulletin reports the summaries of replies to letters giving facts and figures secured in dry-farming work as carried on by practical farmers in different parts of the State, with a discussion on some climatic features of Wyoming and their relation to dry farming.



Issued July 10, 1909.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JUNE, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ARKANSAS STATION, Fayetteville, C. F. Adams, Director.

Peach Growing in Arkansas. By E. Walker. (Bulletin 79, rev., pp. 251–285, figs. 7.)

Directions for the planting and care of peach orchards in Arkansas are given in this bulletin.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Grape Growing. By O. B. Whipple. (Bulletin 141, pp. 3–16, figs. 8.)

This bulletin gives directions for the culture of grapes in Colorado with a view of improving the industry, with notes on the varieties grown in the State, the insects and diseases affecting grapes, and estimates on the cost of growing and the profits of the industry.

Tillage, Fertilizers, and Shade Crops for Orchards. By W. Paddock. (Bulletin 142, pp. 5–16, pl. 1.)

Notes on tillage and fertilizer practices for orchards in Colorado are given in this bulletin.

Cabbage Growing on the Irrigated Lands of Colorado. By E. R. Bennett. (Bulletin 143, pp. 3–8, figs. 4.)

Directions for the culture of cabbages under irrigated conditions in Colorado, as determined from the practices of successful growers, are presented in this bulletin.

Celery Growing in Colorado. By L. J. Reid. (Bulletin 144, pp. 3–12, figs. 6.)

Directions are given in this bulletin for the culture, storing, harvesting, and marketing of celery in Colorado.

Potato Notes. By E. R. Bennett, W. Paddock, and S. A. Johnson. (Circular 1, pp. 14.)

This circular gives directions for the successful treatment of seed and the culture and storage of potatoes in Colorado, with notes on potato diseases and insect pests.

Hog Raising in Colorado. By H. M. Cottrell. (Circular 2, pp. 14.)

This circular gives directions for the care of breeding stock and for the raising of pigs as a profitable industry in Colorado.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. 52.)

This contains the usual financial, executive, and departmental reports reviewing the work of the station during the fiscal year ended June 30, 1907.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 99-148.)
 A report similar in scope to the above for the fiscal year ended June 30, 1908.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Insect Pests of Clover and Alfalfa. By J. W. Folsom. (Bulletin 134, pp. 113-197, pls. 2, figs. 35.)

This bulletin gives detailed information gathered during three seasons regarding both the most injurious and less important insect pests of clover and alfalfa in Illinois.

A Phosphate Problem for Illinois Landowners. By C. G. Hopkins. (Circular 130, pp. 16.)

Notes are given in this circular on the kinds of phosphatic fertilizers and their methods of application to Illinois soils for the maintenance of soil fertility, including the results of tests made with the various fertilizers.

INDIANA STATION, Lafayette, A. Goss, Director.

The Estimation of Fat in Unsweetened Evaporated Milk. By O. F. Hunziker and G. W. Spitzer. (Bulletin 134, pp. 591-651, figs. 7.)

This bulletin gives the results of experiments to determine the cause of the low percentage of butter fat in a large portion of the evaporated milk on the market as reported by chemists and pure-food departments throughout the country.

Growing Better Gems. By J. Troop and C. G. Woodbury. (Bulletin 135, pp. 3-11, figs. 8.)

It is the purpose of this bulletin to discuss certain factors which have a direct bearing on the improvement of Indiana cantaloup growing, to report further progress in certain lines of investigation, which were mentioned in Bulletin 123, and to make certain recommendations the carrying out of which will so improve the quality of Indiana cantaloups that they may command better prices on the market and leave a greater profit for the grower.

Growing Onions from Seed. By J. Troop and C. G. Woodbury. (Circular 15, pp. 22, figs. 13.)

This circular discusses the methods employed in growing, harvesting, and marketing onions from seed as practiced in northern Indiana.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Analyses of Commercial Fertilizers. By M. A. Scovell, H. E. Curtis, and G. Roberts. (Bulletin 136, pp. 343-427.)

The results of inspection work with fertilizers, including analyses and valuation of part of the samples collected in 1908, are reported in this bulletin.

The Army Worm. By H. Garman. (Bulletin 137, pp. 431-449, pls. 6, figs. 5.)

The life history, insect and fungus enemies, and means of controlling the army worm are described in this bulletin, and a brief bibliography is appended.

Analyses of Commercial Fertilizers. By M. A. Scovell, H. E. Curtis, and G. Roberts. (Bulletin 138, pp. 453-486.)

This bulletin completes the results of inspection work with fertilizers during 1908, and in connection with Bulletin 136 reports analyses representing 406 brands of fertilizers collected in 1908.

Tobacco. By W. H. Scherffius and H. Woosley. (Bulletin 139, pp. 5-36, pls. 16, map 1.)

This bulletin presents the best methods of cultivation of tobacco now in use, discussing in detail the plant bed and its care, soil selection, breaking the ground, fertilizers, preparation of the soil, topping, insect pests, selection of seed plants, harvesting, curing, stripping, grading, and marketing.

Fertilizers. By G. Roberts. (Bulletin 140, pp. 39-87.)

This bulletin discusses the nature and use of fertilizers in their application to Kentucky soils under the following topics: (1) How to purchase and use commercial fertilizers; (2) sources of fertilizing materials; (3) care of farm manures; and (4) green manure crops.

Concentrated Commercial Feeding Stuffs. By J. D. Turner and H. D. Spears. (Bulletin 141, pp. 91-204.)

This bulletin gives the results of inspection work with feeding stuffs, including analyses of the samples collected in 1908.

Carnation Root Knot. By H. Garman. (Bulletin 142, pp. 207-216, pls. 4, figs. 4.)

Notes are given in this bulletin on the life history of the eelworm which causes the root knot of plants, and methods of treatment are suggested.

Sheep Scab. By E. S. Good. (Bulletin 143, pp. 219-246, figs. 8.)

The results of experiments conducted by the station for the control of sheep scab with a view of preventing the spread of the disease and encouraging the sheep industry in the State are presented in this bulletin. The Federal regulations to prevent the spread of scabies in sheep are appended.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. XIII+286, pls. 25, fig. 1.)

This contains a financial statement to June 30, 1906, the report of the director reviewing the work of the station during the year, reprints of Bulletins 124-128, inclusive, of the station issued during the year, miscellaneous analyses, and meteorological summaries for 1906.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. XXIX+215, pls. 16, figs. 3.)

This contains a financial statement to June 30, 1907, reports by the director reviewing the experimental, pure food, and feeding stuffs work of the station during the year, reprints of Bulletins 129-132, inclusive, analyses of mineral waters of the State, and meteorological data for 1907.

MAINE STATION, Orono, C. D. Woods, Director.

Field Experiments in 1906-1908. By C. D. Woods and J. M. Bartlett. (Bulletin 167, pp. 85-104.)

This bulletin gives the results of culture and fertilizer experiments with potatoes for the years 1906-1908, inclusive, tests of blight resistant varieties and of target brand fungicide for the control of potato diseases, the culture of alfalfa in Maine, the control of wild mustard, and liming experiments.

[Feeding stuffs, fertilizers, seeds, and food and drug inspection in Maine.] (Official Inspections Bulletins 1-7, pp. 8 each; 8, pp. 9-16; 9, pp. 17-32; 10, pp. 33-60; 11, pp. 61-72.)

These bulletins contain the official results of inspection work with foods and condiments, drugs, feeding stuffs, fertilizers, seeds, and miscellaneous materials during 1908 and 1909.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

How to Fight Cranberry Insects. By H. J. Franklin. (Bulletin 126, pp. 8.)

This bulletin is a revision of Bulletin 115 of the station, and gives the results of studies made on cranberry insects since that bulletin was published, with directions for the control of different cranberry insects.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 245, pp. 4.)

This is a summary for May, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Corn Improvement. By J. A. Jeffery. (Special Bulletin 47, pp. 5-27, figs. 23.)

This bulletin, which is a revision of Special Bulletin 34, discusses the improvement of corn in Michigan by a more careful selection of seed and better cultivation and the fertilizers for corn under varying conditions of soil, cropping, and location; and directions are given for corn judging.

Methods of Breeding for the Improvement of Michigan Cattle. Organization of Cooperative Cattle Breeders' Associations in Michigan. By R. S. Shaw and W. F. Raven. (Circular 4, pp. 33-44, figs. 3.)

This publication has been prepared to call attention to the urgent need for the adoption of improved methods of live stock breeding in Michigan, to discuss practical and applicable methods of accomplishing the same, and to present specific plans within reach of the stockman and farmer. The first part deals with methods of improving Michigan cattle as described in Bulletin 241, now out of print, and the last part with the establishment of cooperative breeders' associations.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Fifteenth Annual Report, 1908. (Annual Report, 1908, pp. 163-186, pl. 1.)

This contains the organization list, a financial statement, the report of the director reviewing the work of the station during the year, lists of station publications available for distribution, donations, and loans, and a summary of meteorological data for the year 1908.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

On Certain Seed-infesting Chalcis Flies. By C. R. Crosby. (Bulletin 265, pp. 367-388, pls. 4, figs. 23.)

Descriptive and life history notes are given in this bulletin on a number of chalcis flies which infest the seeds of various plants.

The Black Rot of the Grape and its Control. By C. S. Wilson and D. Reddick. (Bulletin 266, pp. 391-411, figs. 12.)

This bulletin describes the life history of the fungus (*Guignardia bidwellii*) causing the black rot of grapes and gives the results of experiments in 1908 for the control of this disease.

Fertilizer and Seeding Experiments with Root Crops. By C. F. Clark and E. R. Minns. (Bulletin 267, pp. 415-439, fig. 1.)

Results of experiments during 1907 and 1908 embodying (1) a comparison of methods of planting, rate of seeding, and source of seed; and (2) a study of the fertilizer requirements of mangels, are reported in this bulletin.

An Apparatus for Measuring Acidity in Cheese Making and Butter Making. By C. A. Publow. (Circular 7, pp. 17-20, fig. 1.)

A description of an acidimeter with directions for its use is given in this circular.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

How Sod Affected an Apple Orchard. By F. H. Hall. (Bulletin 314, popular edition, pp. 3-20, fig. 1.)

A popular edition of Bulletin 314, which is a preliminary report on experiments now being conducted by the station to determine whether the apple thrives better under tillage or in sod in New York.

The Grape Districts of New York and Table of Varieties. By M. J. Dorsey. (Bulletin 315, pp. 133-161.)

The purpose of this bulletin is to place before the grape growers of New York an accurate summary of the information contained in the grape book, which was prepared by this station and published by the State department of agriculture, the information being contributed by the grape growers of the State in cooperation with the station.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Nineteenth Annual Report, 1908. (Annual Report, 1908, pp. 59.)

This contains reports by the director and heads of departments reviewing the principal lines of work of the station during the year, and a financial statement to June 30, 1908.

First Annual Report of the Dickinson Sub-Experiment Station for the Year 1908. (Annual Report Dickinson Substation, 1908, pp. 39, pls. 9.)

The results of the year's work with forage plants, the testing and breeding of cereals, the study of field and crop methods, and the cultivation of fruits and trees are reported.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Mineral Elements in Animal Nutrition. By E. B. Forbes. (Bulletin 201, rev., pp. 129-172.)

On account of errors in the first edition this bulletin has been reprinted and a table of contents added. The bulletin gives the more important facts known to physiologists regarding the functions of mineral elements in animal nutrition, for the purpose of supplying to the student of agriculture an introduction to this important though somewhat unfamiliar subject.

Plans and Summary Tables of the Experiments at the Central Farm, Wooster, on the Maintenance of Soil Fertility, Arranged for Reference in the Field. (Circular 92, pp. 32, dgms. 6.)

Carriers of Phosphorus in Fertilizers. By C. E. Thorne. (Circular 93, pp. 8.)

The results of comparative tests with acid phosphate, bonemeal, dissolved boneblack, and basic slag on various crops are reported in this circular.

[Reprints of Circulars 1 to 50.] (Pp. 123.)

These circulars, on a variety of subjects, are reprinted primarily to supply the demand from librarians and others for complete files of the station circulars.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Annual Report, 1908. (Annual Report, 1908, pp. 276, pls. 31, figs. 2.)

This contains the usual financial, executive, and departmental reports for the year ended June 30, 1908, reprints, with changes in some instances, of Bulletins 84, 86, part of 87, 88, and 89, and the following social papers: An investigation of the causes of variation in soil fertility as affected by long continued use of different fertilizers; summary of results obtained from experiment with commercial fertilizers, yard manure, lime, etc., extending through a period of 25 years; comparative soil temperature study of two plats differently treated; a study of certain mutual properties of two adjoining fields which gave widely varying yields; influence of pure-bred sires; bacterial efficiency of the milking machine; physical and chemical study of the Milton Grove soils; is the phosphoric acid of floats made soluble by rotting manure? meteorology; a study of the causes which affect yield and quality in apples; whole vs. piece-root grafting; small fruits in 1907; and detailed meteorological records for 1907.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Control of the Brown Ant and the Mealy Bug in Pineapple Plantations.

By W. V. Tower. (Circular 7, Spanish edition, pp. 4.)

This is a Spanish edition of Circular 7 of the station which gives notes on the habits and means of controlling the brown ant (*Solenopsis geminata*) and the mealy bug (*Pseudococcus citri*) which are destructive to pineapples.

Picking and Packing Citrus Fruits. By M. J. Iorns. (Circular 8, pp. 4-20, figs. 2.)

Directions are given in this circular for picking, packing, and handling citrus fruits grown in Porto Rico, with a view to encourage the development of the citrus fruit industry on the island.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Sweet Potato Work in 1908. By T. E. Keitt. (Bulletin 146, pp. 3-21.)

This bulletin gives the results of tests of varieties with a view of ascertaining their starch content and comparative yields; to show the content of fermentable carbohydrates, their utilization as a source of alcohol, and their value as a feeding stuff; to obtain results as to the fertilizing elements removed from the soil by a crop of sweet potatoes; and to show the content of water, starch, sugars, and protein at different stages of growth.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Fighting the Insect Pests and Diseases of Orchard, Field, and Garden Crops. By H. L. Price. (Circular 7, pp. 2-112, figs. 41.)

Descriptive notes are presented in this circular on the nature and control of various diseases and insect pests affecting fruits and vegetables grown in Virginia.

Annual Report, 1908. (Annual Report, 1908, pp. 150, pls. 6, figs. 66, dgm. 1.)

This contains, in addition to the usual financial, executive, and departmental reports reviewing the work of the station during the year, the following special articles: First report on the culture and analyses of French cider apples in Virginia; life history of the codling moth in Virginia; varietal study of tomatoes; varietal study of sweet corn; the domination of fermentation by the use of selected yeasts; triple sterilization as applied to canning corn; pyæmic arthritis; results obtained from inoculating soy beans with artificial cultures; assimilation of nitrogen by different strains of *Bacillus radicicola* in the absence of the host plant; denitrification, the effect of fresh and well-rotted manure on plant growth; and meteorological data for 1907 and 1908.

VIRGINIA TRUCK STATION, T. C. Johnson, Superintendent.

Preliminary Report on Potato Germination Troubles in 1909. (Circular 2, pp. 3-7.)

This circular gives the results of investigations made by the station in cooperation with the Bureau of Plant Industry of this Department as to the causes of the failure of Maine potato seed to germinate in 1909.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Lime as a Fertilizer. By R. W. Thatcher. Farm Practices in Applying Land Plaster in Western Oregon and Western Washington. By B. Hunter. (Bulletin 88, pp. 3-24, figs. 10.)

The beneficial effect of liming certain soils is discussed in this bulletin, together with notes on the application of land plaster for leguminous crops.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Licensed Commercial Feeding Stuffs, 1908. By F. W. Woll. (Bulletin 170, pp. 3-96, fig. 1.)

The results of feeding stuff inspection work in 1908, including analyses of samples collected, are reported in this bulletin. The text of the State feeding stuff law is appended.

Report of the Director, 1908. By H. L. Russell. (Bulletin 171, pp. 35.)

This is a review of the experimental and research work of the station in 1908, a list with summaries of the publications issued during the year, an account of the extension work of the station, and a financial statement to June 30, 1908.

Tests of Dairy Cows, 1907-8. By F. W. Woll and R. T. Harris. (Bulletin 172, pp. 3-33, figs. 18.)

Records of 1,327 different tests of 418 different cows are reported in this bulletin.

Milking Machine Experiments with the B. L. K. Cow Milker. By F. W. Woll and G. C. Humphrey. (Bulletin 173, pp. 3-30, figs. 4.)

This bulletin gives the results of tests with milking machines which were made for the purpose of furnishing the dairy farmers of the State reliable information as to the practicability and general value of this method of milking under modern conditions of dairying.

The Conservation of Phosphates on Wisconsin Farms. By A. R. Whitson and C. W. Stoddart. (Bulletin 174, pp. 3-20, figs. 5.)

The results of experiments with phosphate fertilizers in Wisconsin and other States are presented in this bulletin, with suggestions to Wisconsin farmers for maintaining the soil phosphates on their farms.

A Three-Year Campaign against Bovine Tuberculosis in Wisconsin. By H. L. Russell and C. Hoffmann. (Bulletin 175, pp. 3-18, figs. 4.)

A report of the educational work of the station as to the importance of tuberculosis to the live-stock industry of the State is presented in this bulletin.

The Improvement of Wisconsin Tobacco through Seed Selection. By E. P. Sandsten. (Bulletin 176, pp. 3-17, figs. 11.)

The results of three years' work at the station in the improvement of tobacco by means of seed selection are reported in this bulletin.

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AUG 18 1909

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Issued August 12, 1909.

United States Department of Agriculture, OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JULY, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA TUSKEGEE STATION, Tuskegee Institute, G. W. Carver, Director.

Increasing the Yield of Corn. By G. W. Carver. (Bulletin 15, pp. 5-11, figs. 5.)

The results of variety, fertilizer, and culture experiments with corn with a view of improving the quality and yield of crop while maintaining or increasing soil fertility are reported in this bulletin.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Commercial Fertilizers. By J. S. Burd. (Bulletin 202, pp. 295-325.)

The results of fertilizer inspection work for the six months ended December 31, 1908, including analyses of 289 samples, are reported in this bulletin.

California State Farmers' Institute at the University Farm, Davis. (Circular 40, pp. 4.)

The program of the meetings held October 8-10, 1908, is given in this circular.

The School of Agriculture on the University Farm, Davis, California. (Circular 41, pp. 6, figs. 5, dgm. 1.)

Information regarding the location, equipment, entrance conditions, and purpose of this school are given in this circular.

Pacific Coast Entomological Conference and Special Short Course in Horticulture, April and May, 1909. (Circular 42, pp. 3-16.)

The programs are presented of the meeting called for the purpose of discussing the economic entomological problems of the Pacific slope region, and of a special short course in horticulture offered by the agricultural department of the university.

University of California School of Agriculture. (Circular 43, pp. 3-14, figs. 12.)

This circular gives information regarding the location, buildings, equipment, and purposes of the State school of agriculture.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Corn and Cotton Culture. By J. M. Kimbrough. (Bulletin 84, pp. 211-232, fig. 1.)

The results of variety, culture, and fertilizer tests with corn and cotton grown at the station in 1908 are reported in this bulletin.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Bordeaux Mixture. By C. S. Crandall. (Bulletin 135, pp. 201-296, figs. 8.)

This bulletin discusses the history, formulas, chemistry, fungicidal properties, and injurious effects of Bordeaux mixture, and gives the results of field experiments with sprayed trees in 1906 and 1907 for the purpose of determining the chemical effects of the fungicide upon foliage.

Methods of Seeding Oats—Drilling and Broadcasting. By A. N. Hume, O. D. Center, and L. Hegnauer. (Bulletin 136, pp. 299-312, fig. 1.)

The results of tests of these two methods of seeding oats at several places in the State, the cost of seeding by the two methods, and results derived from other sources are presented in this bulletin, together with notes on the treatment of oats for smut.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Analyses of Registered Feeding Stuffs. By J. T. Willard et al. (Bulletin 158, pp. 91-142, fig. 1.)

This bulletin gives the text of the Kansas feeding-stuff law and the results of analyses of the feeding stuffs registered and sampled to July 1, 1908, and discusses the rulings under the law relating to feeding-stuff inspection.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Preliminary Report on the Anthracnose or Pod Spot Disease of Beans.

By C. W. Edgerton. (Bulletin 116, pp. 3-11, figs. 3.)

This bulletin gives notes on the nature of this disease and directions for its control.

MAINE STATION, Orono, C. D. Woods, Director.

The Text of the Laws. (Official Inspection 12, pp. 73-92.)

The laws relating to agricultural seeds, the grading, packing, and branding of apples, creamery glassware, feeding stuffs, fertilizers, and foods and drugs are reported.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Cabbage Experiments and Culture. By C. P. Close and T. H. White. (Bulletin 133, pp. 175-199, figs. 4.)

This bulletin gives the results of fertilizer experiments on cabbages with a view of determining the relation of fertilizers to cabbage diseases and of the resistance of varieties to disease. A paper by H. J. Patterson on The Chemical Composition of the Cabbage Plant is included.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 246, pp. 4.)

A summary for June, 1909.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Inspection and Analyses of Commercial Fertilizers on Sale in the State. (Circular 25, pp. 4-23.)

The results of fertilizer inspection, including analyses of the samples taken during December, 1907, and January, 1908, are reported.

Inspection and Analyses of Commercial Fertilizer on Sale in the State.
(Circular 26, pp. 4-23.)

Analyses of samples taken in the fertilizer inspection work to March, 1908, are reported.

MISSOURI STATION, Columbia, H. J. Waters, Director.

Hardiness of Peach Buds, Blossoms, and Young Fruits as Influenced by the Care of the Orchard. By W. H. Chandler. (Circular of Information 31, pp. 31, figs. 11.)

This circular discusses the influence of pruning, cultivation, and thinning on bud development and the production of a fruit crop.

Missouri Apple Growing. By J. C. Whitten. (Circular of Information 32, pp. 14, figs. 2.)

Notes on the lands adapted to apple growing, varieties, planting and care of orchards, diseases affecting the fruit, and the picking and packing of apples are presented in this circular.

Hotbeds and Cold Frames—Their Preparation and Management. By W. L. Howard. (Circular of Information 33, pp. 19, figs. 11.)

General directions for the preparation of hotbeds and cold frames for the culture of fruits and flowers are given in this circular, together with notes on the culture of the crops.

Instructions for Spraying. By W. H. Chandler. (Circular of Information 34, pp. 16, figs. 6.)

Directions for the preparation and use of insecticides and fungicides for the control of orchard insects and diseases are given in this circular.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Report of the Nebraska Seed Laboratory. By E. M. Wilcox and Nelle Stevenson. (Bulletin 110, pp. 5-29, figs. 12.)

The purpose of this bulletin is to present in a somewhat popular way some of the most interesting results secured by the laboratory from January 1 to July 1, 1908.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Glanders. By W. B. Mack. (Circular 1, pp. 8.)

Notes are given in this circular for the benefit of ranchmen and horse owners concerning some of the well-known facts relating to the history, causes, symptoms, and treatment of glanders, which has made its appearance in certain localities in the State.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Concentrated Feeding Stuffs. By C. S. Cathcart, V. J. Carberry, and C. L. Pfersch. (Bulletin 220, pp. 3-69.)

This bulletin contains the results of the ninth annual inspection of the concentrated feeding stuffs sold in the State, including analyses of samples, 58 of which are reported as new to the State or have been completely analyzed for the first time by the station.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Feeding Fermented Cotton-seed Meal to Hogs. By R. S. Curtis. (Bulletin 200, pp. 5-16, figs. 4.)

This bulletin reports the results of tests to determine (1) the amount of fermented cotton-seed meal which might be fed with economy and safety, in con-

junction with corn, to young and growing hogs; (2) the economy of gain from feeding cotton-seed meal in the proportions specified, and in comparison with corn alone, and with corn and linseed meal combined.

Origin and Importance of the Scuppernong and Other Muscadine Grapes. By F. C. Reimer. (Bulletin 201, pp. 5-21, figs. 7.)

This bulletin discusses the history, importance, characteristics, and varieties of Scuppernong grapes in the South, with particular reference to their culture in North Carolina.

OHIO STATION, Wooster, C. E. Thorne, Director.

Studies in Diseases of Cereals and Grasses. By A. D. Selby and T. F. Manns. (Bulletin 203, pp. 187-236, pls. 2, figs. 20.)

This bulletin presents the results of a year's investigations conducted in field and laboratory of anthracnose diseases of cereals and grasses which are widespread in the State.

Report of Horticultural Inspection. By F. H. Ballou. (Circular 94, pp. 70, figs. 28.)

The lines of inquiry conducted in 1908 and reported in this circular include observations on the special adaptation of sections of Ohio to the growing of certain products; the possibility of successfully growing these same products upon a scale sufficient for home consumption and local markets; the methods employed in the leading horticultural sections; the examination of new fruits and other horticultural products originating in various parts of the State; and the holding of field meetings where the horticultural public were brought into close personal touch and observation of striking horticultural object lessons.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Progress in Variety Tests of Barley. By C. Willis and J. V. Bopp. (Bulletin 113, pp. 501-522, fig. 1.)

This bulletin reports the results of tests with 87 varieties of barley grown at the station in 1908 in cooperation with the Bureau of Plant Industry of this Department.

TEXAS STATION, College Station, H. H. Harrington, Director.

Report of Progress at the Troup Substation. By W. S. Hotchkiss. (Bulletin 121, pp. 3-9, figs. 10.)

The results of variety, cultural, and fertilizer tests with orchard and small fruits, grapes, nuts, vegetables, and forage crops grown at this substation for a number of years are reported in this bulletin.

VERMONT STATION, Burlington, J. L. Hills, Director.

Plant Diseases; Potato Spraying. By L. R. Jones and N. J. Giddings. (Bulletin 142, pp. 103-115, figs. 4.)

Notes are given in this bulletin on potato, orchard, and garden crop diseases prevalent in the State in 1908, together with the results of potato spraying experiments for the control of early and late blight.

Commercial Fertilizers; the Service of a Fertilizer Control; Soil Physiography. By J. L. Hills, C. H. Jones, and H. L. Miner. (Bulletin 143, pp. 119-260.)

This bulletin discusses in detail the results of fertilizer inspection in 1909, including analyses of samples taken representing 133 brands, together with a special article on soil physiography which treats of the air, ground water, water in motion, ice action, and living organisms in their relation to rock disintegration and soil formation.

Concerning Work which the Station Can and Can Not Undertake for Residents of the State. By J. L. Hills. (Circular 3, pp. 6.)

This circular sets forth the functions of the station as defined by the National and State laws.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

The Grapecane Gall-maker and the Grapecane Girdler. By F. E. Brooks. (Bulletin 119, pp. 321-339, pls. 5.)

Notes are given in this bulletin on the life history and habits of the grape-cane gallmaker (*Ampeloglypter sesostris*) and the grapecane girdler (*A. ater*), and on the natural enemies and artificial means of controlling these pests.

Cabbage Worms and Suggestions for Destroying Them. By W. E. Rumsey and F. E. Brooks. (Bulletin 120, pp. 345-352, pls. 2.)

This bulletin gives notes on the importance of cabbage raising in West Virginia, with descriptions and means of controlling the more important cabbage worms found in the State.

Apple Enemies and How to Fight Them. By W. M. Munson. (Bulletin 121, pp. 357-366.)

Formulas are presented in this bulletin for making insecticides and fungicides, with directions for their use in the control of the most important insects and diseases of apples.

The Farmer's Home Garden. By A. L. Dacy. (Bulletin 122; pp. 373-404, figs. 2, dgm. 1.)

Notes are given in this bulletin on the location of the garden, preparation of the soil, fertilizers, the selection and planting of the crops, construction of hot-beds and cold frames, the control of insects and plant diseases, and the culture of different farm garden crops.

[Spray Calendar.] (Spray Calendar, folio.)

Formulas and directions for the making and use of insecticides and fungicides are presented in this calendar.



United States Department of Agriculture,
OFFICE OF EXPERIMENT STATIONS,
A. C. TRUE, Director.

**LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF
EXPERIMENT STATIONS DURING AUGUST, 1909.**

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Control of Insects and of Plant Diseases. By C. D. Jarvis. (Bulletin 56, pp. 220-282, pls. 8.)

This bulletin gives general information on the subject of spraying for the control of injurious insects and plant diseases prevalent in the State.

A Study of Some Connecticut Dairy Herds. By J. M. Trueman. (Bulletin 57, pp. 287-310.)

Records of five Connecticut herds are presented in this bulletin.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Some Studies on the Colletotrichum gossypii. By R. J. H. DeLoach. (Bulletin 85, pp. 3-15, figs. 8.)

The results of field and laboratory investigations on the anthracnose of cotton made by the author in the years 1906, 1907, and 1908 are reported in this bulletin.

Sorghum vs. Corn Meal as a Source of Carbohydrates for Dairy Cattle. By P. N. Flint. (Bulletin 86, pp. 19-27.)

The results of experiments to compare these two feeds as to cost and efficiency in milk production are reported in this bulletin.

IDAHO STATION, Moscow, E. E. Elliott, Director.

Alfalfa. By E. Nelson. (Bulletin 66, pp. 3-37, figs. 6.)

This bulletin treats of alfalfa culture under irrigation and dry-land farming, together with notes on the uses of alfalfa for pasture, soil improvement, and as a general feeding stuff.

Better Dairy Methods. By J. H. Frandson. (Bulletin 67, pp. 3-48, figs. 18.)

This bulletin gives information with a view of making dairying more profitable and more desirable as a business in Idaho, including the selection, improvement, and care of cows and the care and handling of milk and its products.

Annual Report, 1908. (Annual Report, 1908, pp. 37.)

This contains a financial statement and the report of the director which summarizes the work of the station during the year ended June 30, 1908.

IOWA STATION, Ames, C. F. Curtiss, Director.

Some Plant Diseases of 1908. By L. H. Pammel and Charlotte M. King. (Bulletin 104, pp. 234-259, figs. 17.)

Notes are given in this bulletin on the character, life history, and treatment of various diseases affecting millet, wheat, oats, and beans prevalent in the State in 1908, together with a bibliography of the literature bearing on the subject.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Cowpeas. By A. M. Ten Eyck and L. E. Call. (Bulletin 160, pp. 179-209, figs. 10.)

This bulletin discusses the uses, varieties, culture, harvesting, thrashing, and storing of cowpeas.

Registered Feeding Stuffs. (Feeding Stuffs Bulletin 1, pp. 4.)

Lists are given of the manufacturer or dealer, his address, and the name of the feed registered in Kansas for the year ending June 30, 1910, and of those whose registration has expired.

Preparing Land for Winter Wheat. By A. M. Ten Eyck and L. E. Call. (Circular 2, pp. 4.)

The results of tests of several methods of preparing the seed bed for wheat on the yield of the crop are given in this circular.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

The Principles and Practice of Feeding, including Our Available Stock Foods. By W. H. Dalrymple. (Bulletin 115, pp. 3-63, figs. 12.)

The purpose of this bulletin is to draw the attention of stock owners in Louisiana to available feeding materials that can be grown in the State, and how they may be intelligently utilized to the best advantage.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Brown-tail Moth, House Fly, and Mosquito. By T. B. Symons. (Bulletin 134, pp. 201-223, figs. 11.)

Descriptive and life history notes are given on the brown-tail moth and the introduction of this pest into Maryland, together with notes on the common house fly and mosquito as disease-bearing insects and the means of controlling these pests.

Butter Making in Maryland. By C. W. Melick. (Bulletin 135, pp. 225-284, figs. 3.)

Investigations are reported in this bulletin to determine the causes for lack of uniformity of butter made at Maryland creameries, and include the following features: (1) An inspection and score of the patron's herd, facilities, and premises; (2) grading the milk according to score and churning each grade of cream separately; (3) determining the bacteria content, acidity, and making a curd test of each patron's milk; (4) noting the methods employed by the creameries; and (5) determining the commercial grade and value of butter derived from different qualities of milk.

Whipped Cream. By C. W. Melick. (Bulletin 136, pp. 285-300.)

This bulletin reports investigations to determine the effects of various factors on the whipping quality of cream, the best kind of cream for whipping purposes, and the causes why pasteurized cream fails to whip.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Bee Keeping in Massachusetts. By B. N. Gates. (Bulletin 129, pp. 3-31, figs. 2.)

This bulletin gives an account of the history, conditions, and possibilities of bee keeping in Massachusetts, including notes on the principal diseases and enemies of bees and a bibliography of the subject.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad.
 (Meteorological Bulletin 247, pp. 4.)
 This is a summary for July, 1909.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.
 Spraying vs. Dusting. By F. W. Faurot. (Bulletin 19, pp. 3-24,
 pls. 16.)

The results of experiments to test the comparative values of commercial dust, home-made dust, and liquid sprays for the control of apple bitter rot, apple scab, and other fungus diseases of the apple are reported.

Spraying Machinery. By F.W. Faurot. (Bulletin 20, pp. 3-26, pls. 12.)
 This bulletin gives information regarding commercial spraying machinery and as a guide for home construction for the purpose of calling attention to those commendable or objectionable features which in general make machines desirable or undesirable for use under Missouri conditions.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Equine Anemia: An Account of a Recent Inquiry into the Nature and Cause of an Obscure and Fatal Disease among Horses in Eastern Nevada. By W. B. Mack. (Bulletin 68, pp. 7-96, pl. 1, charts 14.)

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Investigations Relative to the Use of Nitrogenous Materials, 1898-1907.
 By E. B. Voorhees and J. G. Lipman. (Bulletin 221, pp. 3-52.)

This is a summary of the investigations conducted by the station during ten years on the use and effects of nitrogenous fertilizers, the following topics being considered: (1) The yields of dry matter and of nitrogen in the cylinder soils; (2) the proportionate amounts of nitrogen in the crops as affected by fertilization; (3) the utilization of nitrogen in different nitrogenous materials; (4) the relative efficiency of the nitrogen in different materials; (5) The residual effect of nitrogenous substances; (6) denitrification; and (7) the effect of special treatment on the income and outgo of nitrogen in the soil.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Sweet Potato Culture. By F. García. (Bulletin 70, pp. 5-35, figs. 8.)

This bulletin reports the results of variety, cultural, and fertilizer tests with sweet potatoes, with notes on harvesting, storing, and cost of raising the crop.

The Small Irrigation Pumping Plant. By B. P. Fleming. (Bulletin 71, pp. 3-75, figs. 18, dgms. 4.)

This bulletin is prepared with the view of assisting the newcomer to New Mexico to install and operate small pumping plants for the purpose of securing water from wells for irrigation purposes.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Manufacture and Marketing of Cottage Cheese, Skim-milk-Buttermilk, and Ice Cream. By J. Michels. (Bulletin 202, pp. 5-11, figs. 3.)

Directions for the making and marketing of milk products are given in this bulletin.

Corn Weevils and Other Grain Insects. By R. I. Smith. (Bulletin 203, pp. 5-27, figs. 16.)

The purpose of this bulletin is to give farmers a more accurate knowledge of various grain pests, to suggest preventive measures wherever possible, and to explain the limitations in the use of carbon bisulphid for fumigation of infested grain.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Fattening Trials with Hogs. By J. H. Shepperd and W. B. Richards. (Bulletin 84, pp. 5-24, figs. 13.)

The tests reported in this bulletin include (1) a comparison of barley with corn for fattening pigs; (2) low-grade wheat compared with corn; and (3) the effect of cross breeding on the gains made and on the carcasses of the pigs.

[Food Inspection Work.] By E. F. Ladd. (Special Bulletins 12, pp. 14; 13, pp. 16.)

These bulletins give some of the results of inspection of foods, drugs, beverages, etc., under the provisions of the State law, together with a list of the beverages registered under the new beverage law.

The Food Preservative Controversy. By E. F. Ladd. (Special Bulletin 14, pp. 17-45.)

This bulletin gives a list of questions asked of the physicians of the State relating to the permissibility of using chemical preservatives in food products together with the replies of 171 physicians to these questions bearing on the effects of such chemicals on health.

OKLAHOMA STATION, Stillwater, J. A. Craig, Director.

Variety Test of Peaches. By O. M. Morris. (Bulletin 84, pp. 3-8, fig. 1.)

Descriptive notes are given in this bulletin on the varieties of peaches grown in the station test orchard, together with all reliable information that could be obtained relative to the characteristics, qualities, success, or failure of each variety.

Bermuda Grass. By L. A. Moorhouse, W. L. Burlison, and J. A. Ratcliff. (Bulletin 85, pp. 3-14, figs. 6.)

The results of experiments to determine the economic value of Bermuda grass in Oklahoma are reported in this bulletin, including descriptive notes of the plant, its culture and uses, and its value as hay compared with other hay crops.

OREGON STATION, Corvallis, J. Withycombe, Director.

An Investigation of the Mortality of Incubator Chicks. By E. F. Pernot. (Bulletin 103, pp. 3-16.)

The results of investigations to determine the specific cause of the high mortality of incubator chicks are reported in this bulletin.

Pollination of the Apple. By C. I. Lewis and C. C. Vincent. (Bulletin 104, pp. 3-40, figs. 14.)

This bulletin reports the results of investigations on the setting of fruit by both natural and artificial methods.

Culture of Small Fruits. By C. I. Lewis and C. A. Cole. (Bulletin 105, pp. 3-29, figs. 13.)

Directions for the preparation of the land and the culture, fertilizing, harvesting, and marketing of strawberries, raspberries, blackberries, Logan and phenomenal berries, dewberries, gooseberries, currants, cranberries, etc., are given in this bulletin.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

A Study of Pennsylvania Butter. By H. E. Van Norman and C. W. Larson. (Bulletin 93, pp. 3-14.)

The results of a butter-scoring contest conducted by the dairy department of the college are reported in this bulletin, the purpose being to stimulate an

increased interest in better butter, better methods through study and friendly rivalry among butter makers, and to secure definite information as to the methods used in butter making.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Weeds, Their Eradication and Control. By G. E. Adams. (Bulletin 133, pp. 51-61, pls. 2.)

The results of tests in the control of various weeds by means of spraying with iron sulphate are reported in this bulletin.

Abstracts of Feeding Experiments. Analyses of Commercial Feeding Stuffs. By B. L. Hartwell et al. (Bulletin 134, pp. 65-98.)

This bulletin gives abstracts of feeding experiments conducted by the different experiment stations during the year, together with the results of analyses of feeding stuffs collected by the station during the season of 1908-9.

TEXAS STATION, College Station, H. H. Harrington, Director.

The Effect of Salt Water on Rice. By G. S. Fraps. (Bulletin 122, pp. 3-6, fig. 1.)

The results of experiments to determine what amount of salt water is hurtful in the culture of rice are reported in this bulletin.

WYOMING STATION, Laramie, J. D. Towar, Director.

Lamb Feeding for 1908-9. By A. D. Faville. (Bulletin 81, pp. 3-8, figs. 2.)

Tests of the value of Wyoming-grown grain for fattening sheep are reported in this bulletin.

Soil Nitrogen. By H. G. Knight and F. A. Smith. (Bulletin 82, pp. 3-32, fig. 1, dgm. 1.)

In addition to a general discussion on soils and that which goes to make towards fertility, determinations of the nitrogen content of the soils of the station farm are reported and discussed in this bulletin.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING SEPTEMBER, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Oleander Poisoning of Live Stock. By F. W. Wilson. (Bulletin 59, pp. 381-397, figs. 6.)

This bulletin gives notes on the poisonous properties of oleanders and a report on experiments carried out at the station to define accurately the symptoms of an animal suffering from oleander poisoning and to determine the quantity of the plant necessary to cause death.

Timely Hints for Farmers. By G. E. P. Smith et al. (Bulletin 60, pp. 399-464, figs. 9.)

This bulletin contains reprints of Press Bulletins 67-76, inclusive, issued by the station. The following topics are discussed: Pumping plants for irrigators, resistant eucalypts for planting in southern Arizona, a lesson in diversified farming, cotton growing in Arizona, preserving eggs, progress and prospects of date palm culture, vitality of seeds under water, farm management with sheep, winter onions in the Southwest, and some common plant diseases.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Opportunities for Instruction in Dairy Industry at the University Farm, Davis, California, 1909-10. (Circular 44, pp. 14, figs. 9.)

This circular contains announcements of the farmers' short courses for 1909 and the college of agriculture for 1910.

Farmers' Short Courses for 1909 at the University Farm, Davis. (Circular 45, pp. 3-20, figs. 9.)

The courses announced are: Dairy manufacture, 8 weeks; market milk and cream supply, 2 weeks; irrigation, fertilizers, field and forage crops, 2 weeks; poultry husbandry, 2 weeks; animal industry and veterinary science, 3 weeks; horticulture, viticulture, and entomology, 2 weeks; and farmers' week.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Raising Hogs in Colorado. By H. M. Cottrell. (Bulletin 146, pp. 3-32, figs. 7, dgm. 1.)

This is an information bulletin, giving methods of care and management of hogs for the Colorado market.

Top Working Fruit Trees. By O. B. Whipple. (Bulletin 147, pp. 3-16, figs. 7.)

This is a popular bulletin, giving directions for top working old and young fruit trees.

Cement and Concrete Fence Posts. By H. M. Bainer and H. B. Bonebright. (Bulletin 148, pp. 3-36, figs. 10.)

It is the purpose of this bulletin to show how to make these posts and also to determine the best forms, mixtures, reinforcements, wire fasteners, cost, and general practicability.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Report of the Station Botanist, 1908. By G. P. Clinton. (Biennial Report, 1907-8, pt. XII, pp. 849-934+XXIV, pls. 16.)

This report contains the report of the station botanist and of the board of control of the station. The former gives notes on the fungus and other diseases prevalent in the State in 1908, with a detailed discussion of the following topics: Peach yellows and so-called yellows; chestnut bark disease (*Diaporthe parasitica*); and artificial cultures of Phytophthora, with special reference to oospores. The latter gives notes on the work and administration of the station during the year, and reports of the treasurer to September 30, 1907, and September 30, 1908.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Milk Production. By J. M. Scott. (Bulletin 99, pp. 3-10.)

The results of experiments to ascertain the comparative feeding value of purchased coconut meal and cotton-seed meal and of home-grown sorghum silage and sweet potatoes as milk producers are reported in this bulletin.

HAWAII STATION, Honolulu, E. V. Wilcox, Special Agent in Charge.

Annual Report, 1908. (Annual Report, 1908, pp. 9-84, pls. 7.)

This report contains a summary of the investigations of the station during 1908; reports of the entomologist, horticulturist, and assistant chemist; and reports of rice investigations and Chinese and Japanese mat rush experiments.

IOWA STATION, Ames, C. F. Curtiss, Director.

Notes on Eradication of Weeds, with Experiments made in 1907 and 1908. By L. H. Pammel and Charlotte M. King. (Bulletin 105, pp. 265-300, figs. 19.)

This bulletin includes a general discussion of weeds, a report on methods tried for eradicating various weeds, and a chapter on spraying machinery.

Cold Storage for Iowa Apples. By H. J. Eustace and S. A. Beach. (Bulletin 108, pp. 394-414.)

This bulletin gives an account of investigations in the cold storage of Iowa apples which were carried on in 1906-7 and 1907-8 by the station in cooperation with the Bureau of Plant Industry of this Department.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Analyses of Eggs. By J. T. Willard and R. H. Shaw. (Bulletin 159, pp. 143-177.)

This bulletin contains the detailed results of the analyses of all the eggs laid by 6 pure breeds of chickens from June 18 to July 31, 1905.

Registered Feeding Stuffs. (Feeding Stuffs Bulletin 2, pp. 4.)

A list of the manufacturers or dealers, their addresses, and names of the feeds registered under the Kansas feeding-stuffs law to June 30, 1910, and a list of the feeding stuffs the registration of which has expired in the State are given in this bulletin.

Improved Seed Wheat. By A. M. TenEyck. (Circular 3, pp. 12, figs. 2.)

This is a report of the work of the station with new varieties of wheat.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

A Summary of Meteorological Observations. By J. E. Ostrander. (Bulletin 130, pp. 3-27.)

This bulletin gives summaries of the meteorological observations made at the station for the twenty-year period, 1889 to 1908. It includes also records of such available and at the same time apparently reliable precipitation and temperature records as were made in Amherst previous to 1889.

Meteorological Observations. By J. E. Ostrander and R. C. Lindblad. (Meteorological Bulletin 248, pp. 4.)

This is a summary for August, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Wintering Farm Horses. By H. W. Norton, Jr. (Bulletin 254, pp. 53-59, figs. 3.)

This bulletin is a preliminary report of work done with a view toward formulating more economical rations suitable to maintain horses in good flesh during the season of the year when work is light.

Cement Silos in Michigan. By J. A. Jeffery. (Bulletin 255, pp. 63-92, figs. 29.)

This bulletin includes some of the more important well-established theories of silo construction and presents a number of illustrations of successful Michigan silos with data as to materials used and, where possible, methods of construction and labor required.

Hog Cholera Serum. (Circular 6, pp. 4. figs. 2.)

Brief directions for obtaining and using the serum are given in this circular.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Experiments in Feeding Beef Steers. By J. A. McLean. (Bulletin 121, pp. 12.)

The experiments reported in this bulletin are the beginning of a series of beef production experiments of which others will be carried on in the succeeding years with the purpose of investigating and demonstrating the feasibility of beef production under Mississippi conditions. The objects sought in this instance are (1) The feeding value of cotton-seed meal and hulls combined when fed, (a) to two-year-old cattle, (b) to one-year-old cattle; (2) what amounts are most desirable for daily rations; and (3) the profitableness of making beef on meal and hulls.

Report of the Work at the Holly Springs Station for 1908. By C. T. Ames. (Bulletin 122, pp. 10.)

The results of variety and fertilizer tests with cotton and corn and of fertilizer tests with cowpeas are reported in this bulletin, together with notes on the culture of grasses and forage crops including red and white clover, lespedeza, Bermuda grass, alfalfa, hairy vetch, Florida beggar weed, red top, rape, and Johnson grass.

Inspection and Analyses of Commercial Feeding Stuffs. (Bulletin 123, pp. 3-61.)

This bulletin contains the text of the State feeding-stuffs law approved March 21, 1908, summarizes and discusses its principal features, and gives the results of inspection work, including analyses of 317 samples, during the season of 1908-9.

NEW HAMPSHIRE STATION, Durham, E. D. Sanderson, Director.

Some Essentials in Farm Butter Making. By F. Rasmussen. (Circular 7, pp. 2.)

Notes are given in this circular on milking and separating, cream ripening, churning, salting and working, and packing and marketing.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Twenty-seventh Annual Report, 1908. (Annual Report, 1908, pp. 552, pls. 45, figs. 3, dgms. 12, map 1.)

This contains reports by the treasurer, director, and heads of departments, a list of periodicals received by the station, meteorological records, and an index.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Some Factors Involved in Successful Corn Growing. By C. B. Williams. (Bulletin 204, pp. 5-42, figs. 22.)

The results of experiments conducted by the station during the past six years to determine the relative value of different varieties of corn as producers of shelled corn per acre and the results of seed selection work during the same period are reported in this bulletin.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Glanders. By L. Van Es. (Bulletin 85, pp. 29-75, pls. 5.)

A popular description of glanders and a summary of present knowledge of it are given in this bulletin.

Index for Bulletins 69 to 83, Inclusive, with a List of Press Bulletins and Special Bulletins Published during the same Period. Volume IV. (Index Number, 1909, pp. 3-11.)

OHIO STATION, Wooster, C. E. Thorne, Director.

Forest Conditions in Ohio. By W. J. Green and E. Secrest. (Bulletin 204, pp. 237-277, figs. 11.)

This bulletin reports the results of a reconnaissance survey of the natural forests and artificial forest plantations in the Walhonding Valley and parts of central and southern Ohio.

Experiments with Fertilizers and Manure on Tobacco, Corn, Wheat, and Clover in the Miami Valley. (Bulletin 206, pp. 21, dgms. 3.)

This is a progress report on the results of rotation experiments.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Concentrated Lime-Sulphur: Its Properties, Preparation, and Use. By J. P. Stewart. (Bulletin 92, pp. 3-20, figs. 5.)

This is a general discussion of lime-sulphur, with directions for its preparation and use for various purposes.

Variety Tests of Wheat. By C. F. Noll. (Bulletin 94, pp. 3-13.)

The results of tests of a number of varieties of wheat grown at the station in 1908 and 1909, including the average yields of the varieties of wheat grown during the 19 years 1890-1909, compared with the variety Reliable, are reported in this bulletin.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Some Principles of Manuring with Lime and Magnesia. By O. Loew. (Circular 10, pp. 3-15.)

A discussion of the theory of the functions of lime and magnesia and a report on culture experiments are included in this circular.

Soil Disinfection in Agriculture. By O. Loew. (Circular 11, pp. 3-12.)

This circular contains a scientific discussion and a report of some practical experiments.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Further Results in a Rotation of Potatoes, Rye, and Clover. By H. J. Wheeler and G. E. Adams. (Bulletin 135, pp. 101-126.)

This bulletin gives a continuation of the description of the three-year rotation, an account of which during two courses is to be found in Bulletin No. 74.

TEXAS STATION, College Station, H. H. Harrington, Director.

Alfalfa. By O. M. Ball. (Bulletin 109, pp. 3-18.)

Notes are given in this bulletin on the culture of alfalfa, the weed seeds commonly found in alfalfa seed, including analysis of alfalfa seed examined by the station during the season of 1906-7, the pasturing, curing, feeding value, and enemies of alfalfa, and on growing alfalfa for seed.

NOTE.—Another bulletin, numbered 109, issued in August, 1908, entitled "The estimation of cotton-seed hulls in cotton-seed meal," was noted in the October, 1908, issue of this list.

Commercial Fertilizers and Poisonous Insecticides in 1908-9. By G. S. Fraps. (Bulletin 123, pp. 5-17, fig. 1.)

This bulletin includes the fertilizer and insecticide law, fertilizer valuations for 1908-9, and tables of analyses.

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Issued November 17, 1909.

U. S. Dep't of Agriculture
United States Department of Agriculture,
OFFICE OF EXPERIMENT STATIONS,
A. C. TRUE, Director.

**LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF
EXPERIMENT STATIONS DURING OCTOBER, 1909.**

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ARKANSAS STATION, Fayetteville, C. F. Adams, Director.

Farm Drainage. By C. P. Norgord. (Bulletin 104, pp. 287-314, figs. 17.)

This bulletin gives general information regarding the principles, benefits, and methods of farm drainage.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Suggestions for Garden Work in California Schools. By E. B. Babcock. (Circular 46, pp. 5-46, figs. 13.)

The purpose of this circular is: (1) To interest California educators in the subject of school gardens by telling and illustrating some things that have been done and suggesting what may be accomplished by school children under proper leadership; (2) to give brief directions and suggestions for the use of those who have no other guide at hand and a list of references to easily available literature; and (3) to state briefly what opportunities there are in California to obtain special preparation for teaching elementary agriculture, including school gardening.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Camembert Cheese Problems in the United States. By C. Thom. (Bulletin 58, pp. 311-374, figs. 6.)

This bulletin reports the results of five years' cooperative work between the station and the Dairy Division of the Bureau of Animal Industry of this Department in the manufacture of soft cheese and furnishes sufficient information to enable anyone wishing to do so to manufacture this type of cheese.

Bacterium lactis acidi and Its Sources. By W. M. Esten. (Bulletin 59, pp. 5-27, figs. 5.)

The sources and functions of this organism in its relation to milk and milk products are discussed in this bulletin.

HAWAII STATION, Honolulu, E. V. Wilcox, Special Agent in Charge.

Report on the Insects which Affect the Cotton Plant in the Hawaiian Islands. By D. T. Fullaway. (Bulletin 18, pp. 5-27, figs. 18.)

Notes are given in this bulletin on the life history, habits, and means of controlling the insects which affect cotton in Hawaii.

INDIANA STATION, Lafayette, A. Goss, Director.

Agricultural Extension. By G. I. Christie et al. (Circular 16, pp. 43, figs. 33.)

This circular gives general information regarding the history and different lines of work of the experiment station and the name and number of recent publications available for distribution.

The Farmer's Orchard. By J. Troop and C. G. Woodbury. (Circular 17, pp. 42, figs. 36.)

The purpose of this circular is to discuss the home orchard from the standpoint of the general farmer and to take up in an elementary way the problems involved in caring for orchard fruits, especially the apple, with reference to selection of varieties, choice of a site for the orchard, the selection, planting, pruning, and cultivation of the trees, and the protecting of the tree and fruit from the attacks of its most common enemies.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Influence of Depth of Cultivation upon Soil Bacteria and Their Activities. By W. E. King and C. J. T. Doryland. (Bulletin 161, pp. 211-242, figs. 3.)

This bulletin gives the results of experiments which are regarded as only preliminary in this line of investigations.

Registered Feeding Stuffs. (Feeding Stuffs Bulletin 3, pp. 4.)

Lists are given of the manufacturers or dealers, their addresses, and the name of the feeds registered in Kansas for the year ending June 30, 1910, and those whose registration has expired.

MAINE STATION, Orono, C. D. Woods, Director.

Official Inspections. (Official Inspection 13, pp. 93-100.)

The results of the inspection and examination of coffee, gelatin, sweet oil, and honey under the provisions of the Maine inspection laws in 1909 are reported.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 249, pp. 4.)

This is a summary for September, 1909.

MARYLAND STATION, College Park, H. J. Patterson, Director.

The Angoumois Grain Moth. By T. B. Symons. (Bulletin 137, pp. 7, figs. 2.)

This bulletin is prepared with a view to calling the attention of farmers, millers, and tradesmen to the serious injury that this insect causes, to the importance of preventive measures, and to suggesting the best means of holding it in check.

The Poultry Industry in Maryland with Suggestions for Successful Poultry Management. By C. L. Opperman. (Bulletin 138, pp. 9-71, figs. 27.)

This bulletin gives statistics on the poultry industry in Maryland, the results of investigations on the methods of poultry keeping by those engaged in the industry, and suggestions regarding the successful management of poultry, the purpose being to encourage the poultry industry in the State.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Fertilizer Analyses. By A. J. Patten and C. B. Collingwood. (Bulletin 256, pp. 3-45.)

This bulletin reports the results of inspection work with fertilizers in 1909, including analyses of 235 samples representing 190 brands on sale in the State.

The Grand Traverse Disease or Lake Shore Disease. By C. D. Smith. (Special Bulletin 50, pp. 3-10.)

Notes are given in this bulletin on the symptoms, cause, and treatment of this disease, which attacks farm stock, including a history of the investigations conducted by the station.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Cooperative Experiments in Forest Planting. By F. J. Phillips. (Circular 1, pp. 4.)

Notes are given in this circular on the extent and advantages of forest plantings in Nebraska and on the need and nature of cooperation between farmers and the station for the extension, care, and inspection of forest plantings throughout the State.

Twenty-second Annual Report, 1908. (Annual Report, 1908, pp. XXIV+158, figs. 43.)

This contains a report by the director reviewing the work of the station during the year, a financial statement to June 30, 1908, and the following special articles: The life history and parasitism of *Diplodia zeæ*; directions for the control of Nebraska plant diseases; inheritance of color in the seeds of the common bean (*Phaseolus vulgaris*); the life history of the cedar-rust fungus (*Gymnosporangium juniperi-virginianæ*); the influence of chemical stimulation upon the production of perithecia by *Melanospore pampeana*; dissemination of tuberculosis by the manure of infected cattle; and the second report of the Nebraska seed laboratory.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Twenty-ninth Annual Report, 1908. (Annual Report, 1908, pp. 428, pl. 55, figs. 16.)

This contains summarized accounts of the work and expenditures of the station by the director during the year and detailed reports by the department officers. The following special topics are discussed: Methods concerning ammonia formation in soils and culture solutions; notes on methods and culture media; azotobacter studies; soil inoculations with *Azotobacter beyerincki*; studies of natural oyster propagation at Barnegat, 1908; report on the mosquito work for 1908, etc.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Denatured Alcohol from Tunas and Other Sources. By R. F. Hare, S. R. Mitchell, and A. P. Bjerregaard. (Bulletin 72, pp. 5-52, pl. 1, figs. 5.)

This bulletin gives the results of experiments on the fruits of the prickly pear as a possible source of alcohol for industrial purposes, together with a discussion of the utilization of various crops for alcohol production.

NEVADA STATION, Reno, J. E. Stubbs, Director.

A Report on Irrigation Laws and Litigation in Nevada. By H. Thurtell and G. H. True. (Bulletin 69, pp. 7-57.)

A summary of the State laws and of the litigation arising from the efforts to regulate or acquire rights to water for irrigation purposes is given in this bulletin.

Food and Drug Inspection. (Bulletin 70, pp. 5-32.)

This bulletin reports the text of the State law approved March 13, 1909, discusses the standards of purity adopted for Nevada, and gives the rules and regulations for the inspection, analysis, and filing guaranty of food and drug materials.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Substitution of Roots for Concentrated Foods in Rations for Milk Production. By E. S. Savage. (Bulletin 268, pp. 443-487, figs. 9.)

The purpose of this experiment was to determine the value of the dry matter in mangels, as compared with the dry matter in silage, and to determine the value of the dry matter in mangels, as compared with the dry matter in grain, in rations for milk-producing cows.

Substitutes for Skimmed Milk in Raising Calves. By E. S. Savage and G. W. Tailby, jr. (Bulletin 269, pp. 491-517, figs. 24.)

This bulletin gives the results of experiments during the seasons of 1907-8 and 1908-9 in feeding two commercial food substitutes said to fully take the place of skimmed milk for feeding calves.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Inspection of Feeding Stuffs. (Bulletin 316, pp. 163-251.)

This bulletin gives the results of analyses of feeding stuffs collected in the State during the fall and winter of 1908-9 and the text of an act to amend the agricultural law in relation to concentrated feeding stuffs.

Milking Machines: Effect of Method of Handling on the Germ Content of the Milk. By H. A. Harding, J. K. Wilson, and G. A. Smith. (Bulletin 317, pp. 253-292, pls. 4.)

The results of tests at the station on the effectiveness and economy of milking machines, and the effects of their continuous use on the cow and on the quality of the milk are discussed in this bulletin.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Food Bulletin 16, pp. 63-78.)

This bulletin calls attention to some of the features of the North Dakota pure food and drug law and gives the results of inspection work with coca-bola, benzoate of soda, undrawn poultry, water, meat, wine, whisky, flour, paints, and miscellaneous food products.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Balance between Inorganic Acids and Bases in Animal Nutrition.

By E. B. Forbes. (Bulletin 207, pp. 23-52.)

This bulletin seeks to show the bearing, upon practical animal nutrition, of the relationship between those mineral elements of foodstuffs and of living animal tissues, which in the body give rise to inorganic acids, and the various means at the disposal of the animal for accomplishing protection from these acids through effecting their neutralization.

Protection of Fruit Trees from Rodents. By F. H. Ballou. (Bulletin 208, pp. 53-70, figs. 20.)

This bulletin gives practical information with illustrations of various methods of protecting fruit trees against mice, rabbits, and woodchucks.

Rations for Fattening Swine. By B. E. Carmichael. (Bulletin 209, pp. 71-89.)

The results of experiments to determine the efficiency of various rations, made up in part of corn, for the profitable production of pork are reported in this bulletin.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Digestion Coefficients with Sheep. By J. H. Shepard and A. E. Koch. (Bulletin 114, pp. 525-554.)

The results of digestion experiments with 6 grade Merino wethers to determine the digestibility of grains, hays, and fodders are reported in this bulletin.

Report of Work for 1907 and 1908 at Highmore Substation. By C. Willis. (Bulletin 115, pp. 557-568.)

This bulletin reports the progress of work done at the substation during the past two years in the culture of Kafir corn, durum wheat, broom-corn millets, oats, einkorn, emmer, wheat, and corn. The results of rotation experiments with various crops are also included.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Work at the Tobacco Stations. By E. H. Mathewson. (Bulletin 183, pp. 4-16, figs. 9.)

The results of fertilizer, crop rotation, and breeding work with tobacco conducted by the station in cooperation with the Bureau of Plant Industry of this Department are reported in this bulletin.

VIRGINIA TRUCK STATION, Norfolk, T. C. Johnson, Superintendent.

The Control of Malnutrition Diseases of Truck Crops. By L. L. Harter. (Bulletin 1, pp. 4-16, figs. 4.)

This bulletin gives the results of experiments conducted by the station in cooperation with the Bureau of Plant Industry of this Department to determine the causes of and remedies for the diseases of certain crops grown on truck farms in the South.

Some Insects Injurious to Cabbage, Cucumbers, and Related Crops.

By F. H. Chittenden. (Bulletin 2, pp. 19-48, figs. 14.)

Notes are given in this bulletin on the insects injurious to vegetables and means of their control as a result of investigations conducted by the station in cooperation with the Bureau of Entomology of this Department.

Some Seed Potato Questions in 1909. By T. C. Johnson. (Bulletin 3, pp. 51-55.)

Notes are given in this bulletin on the use of northern-grown seed in the State and on the diseases and other problems connected with the culture of potatoes in tidewater Virginia in 1909.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Sixteenth Annual Report, 1906. (Annual Report, 1906, pp. 32.)

This contains reports by the director and department officers reviewing the work of the station during the year, and a financial statement to June 30, 1906.

Seventeenth Annual Report, 1907. (Annual Report, 1907, pp. 20.)

This contains a report by the director reviewing the work of the station during the year, a financial statement to June 30, 1907, and a summary of the work of the station for the preceding 14 years.

Eighteenth Annual Report, 1908. (Annual Report, 1908, pp. 15.)

This contains a summarized statement by the director of the work and finances of the station for the year ended June 30, 1908.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The Rôle of Inorganic Phosphorus in the Nutrition of Animals. By E. B. Hart, E. V. McCollum, and J. G. Fuller. (Research Bulletin 1, pp. 38, figs. 7.)

The results of experiments with several lots of pigs fed rations differing greatly in the form of phosphorus supplied but in which the quantity of phosphorus furnished was as nearly equal as possible are reported in this bulletin.

Factors Influencing the Phosphate Content of Soils. By A. R. Whitson and C. W. Stoddart. (Research Bulletin 2, pp. 41-60.)

The topics discussed in this bulletin are: (1) The phosphate content of soils as affected by methods of farming, and (2) phosphate availability in its relation to soil acidity.

Issued December 21, 1909.

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United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING NOVEMBER, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Insecticide Materials and Spraying Apparatus: Addresses of Dealers and Manufacturers. By W. E. Hinds. (Circular 3, pp. 4.)

Lists of some of the dealers in insecticide materials and apparatus in Alabama are reported.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Report of the Plant Pathologist and Superintendent of Southern California Stations. By R. E. Smith. (Bulletin 203, pp. 5-63, figs. 23.)

The principal subjects considered in this report are as follows: Plant pathology at the university, development of the Whittier Laboratory and the Riverside Station, condition of the forestry station, walnut culture, investigations on various plant diseases, technical investigations in plant pathology, work in entomology at the Southern California Laboratory, citrus culture and diseases, variety introduction and testing of pecans, peaches and tomatoes, eucalyptus investigations, work in Imperial Valley, Pasadena city farm, and plant diseases of California.

IOWA STATION, Ames, C. F. Curtiss, Director.

Preparation of Corn for Hogs. By W. J. Kennedy and E. T. Robbins. (Bulletin 106, pp. 305-359, figs. 13.)

The experiments reported in this bulletin, to study the effects of different methods of preparing corn on hogs of different ages, had the following objects: Cost of preparation, amount of feed consumed, gains, health of pigs, cost of gains, quality of finish, subsequent gains, and influence of pasture on the effects of the rations.

Tuberculosis and Its Detection. By C. H. Stange et al. (Bulletin 107, pp. 361-390, fig. 1, charts 6.)

This bulletin treats of the subject under the topics of (1) the detection of tuberculosis, (2) the transmission of tuberculosis from cattle to hogs, and (3) report on tuberculous cattle held under quarantine at Iowa State College.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Registered Feeding Stuffs. (Feeding Stuffs Bulletin 4, pp. 4.)

Lists of the manufacturers or dealers, their addresses, and names of the feeding stuffs registered to June 30, 1910, and a list of the feeds the registration of which has expired in the State are given in this bulletin.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. LV.)

This contains the usual executive and departmental reports summarizing the work and finances of the station and the Fort Hays, Garden City, and McPherson branch stations for the year ended June 30, 1908.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

An Experimental Study of Bagasse and Bagasse Furnaces. By E. W. Kerr and E. M. Percy. (Bulletin 117, pp. 106, figs. 45.)

The results of experiments to determine the value of bagasse as fuel and of the engineering problems connected with its use are given in this bulletin.

Oil and Gas in Northwestern Louisiana, with Special Reference to the Caddo Field. By G. D. Harris, I. Perrine, and W. E. Hopper. (Geological Survey Bulletin 8, pp. 52, figs. 5.)

A report of investigations conducted in the fall of 1908 and the spring of 1909 is presented in this bulletin.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 250, pp. 4.)

This is a summary for October, 1909.

Twenty-first Annual Report, 1909. (Annual Report, 1909, pt. 1, pp. 83, pls. 2, fig. 1.)

This contains a report by the director summarizing the work of the station during the year and the following special articles: The cost of a bushel of corn, work in animal feeding, sour and colored gluten feeds, weed seeds in feed stuffs, common weed seeds in grass seed and cattle foods, brief notes on the weeds of Massachusetts, results of seed separation, examination of onion seeds for fungus spores, bacterial rot of cabbage and cauliflower, crown gall, the preservation of maple sirup, onion rot, onion smut, a disease of the radish, celery crown rot, eel worms on lettuce and the influence of water and lime on eel worms (*Heterodera radicicola*), effects of chemicals on vegetation, substances and methods used in exterminating weeds, fumigation dosage for forcing crops, and insects of the year.

Twenty-first Annual Report, 1909. (Annual Report, 1909, pt. 2, pp. 217, figs. 4.)

This contains the usual executive and departmental reports reviewing the work of the station during the year, a report of the treasurer to June 30, 1908, and the following special articles: Effect of soy bean meal and soy bean oil upon the composition of milk and butter fat and upon the consistency or body of butter, soy beans and soy bean oil, methods for fat analysis, the acidity, sulphite content, and color of gluten feed, animal residues as a food for farm stock, alfalfa meal *v.* wheat bran for milk production, variation in peas, the influence of stock on scion in the graftage of plums, cattle poisoning from arsenate of lead, and the periodical cicada in Massachusetts.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Spraying Apples for Curculio and Codling Moth. By E. P. Taylor. (Bulletin 21, pp. 9-69, figs. 18.)

Life history notes are given on these two insects, and the results of an experiment conducted in 1908 for the purpose of working out the most practical scheme of spraying against the curculio and codling moth in apple orchards are reported.

NEW HAMPSHIRE STATION, Durham, E. D. Sanderson, Director.

A Study of Farm Butter Making in New Hampshire. By F. Rasmussen. (Bulletin 141, pp. 247-280, figs. 6.)

Information regarding the number of farmers engaged in butter making, the equipments for making butter on farms, and the methods of butter making, packing, and marketing is given in this bulletin.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses of Paris Green and Lead Arsenate. By C. S. Cathcart. (Bulletin 222, pp. 3-13.)

Analyses of 17 samples of Paris green and 15 of lead arsenate collected in the course of inspection in 1909 are reported in this bulletin.

Analyses and Valuations of Commercial Fertilizers. Analyses of Fertilizer Supplies, Home Mixtures, and Special Compounds. By C. S. Cathcart et al. (Bulletin 223, pp. 3-39.)

Analyses and valuation of 498 samples of fertilizers, including 305 commercial brands, 136 samples of fertilizer supplies, 10 home mixtures, and 35 special compounds are reported in this bulletin as part of the inspection work in 1909.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

A Volumetric Method for the Determination of Casein in Milk. By L. L. Van Slyke and A. W. Bosworth. (Technical Bulletin 10, pp. 231-249, pl. 1.)

A simple method for the determination of casein in milk, which gives results within 0.2 per cent of those obtained by the official method, is described in this bulletin.

Milking Machines and Clean Milk. By F. H. Hall. (Bulletin 317, popular edition, pp. 10.)

This is a popular edition of Bulletin 317 of the station, which gives the results of tests on the effectiveness and economy of milking machines, and the effects of their continuous use on the cow and on the quality of the milk.

OREGON STATION, Corvallis, J. Withycombe, Director.

Spraying for Peach Fruit Spot. By A. B. Cordley and C. C. Cate. (Bulletin 106, pp. 3-15, figs. 8.)

The results of spraying experiments in 1907 and 1908 for the control of peach fruit spot are reported in this bulletin.

PORTE RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Annual Report, 1908. (Annual Report, 1908, pp. 44, pls. 5.)

This contains reports by the director and department officers reviewing the principal lines of work conducted by the station during the year.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Analyses of Commercial Fertilizers. By B. L. Hartwell et al. (Bulletin 137, pp. 3-11.)

This bulletin contains the analyses of the samples of bone and tankage collected in 1909, together with analyses of the samples of commercial fertilizers which represented principally the brands offered for sale during the spring of 1909 as potato manures.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Silo Construction. By L. Carrier. (Bulletin 182, pp. 3-23, figs. 13.)

This bulletin describes the methods of constructing and the cost of several types of silos which experience has shown are likely to be used in Virginia in the future.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Experiment Station's Hybrid Wheats. By R. W. Thatcher. (Popular Bulletin 21, pp. 4, fig. 1.)

This bulletin gives a brief summary of an historical review of the inception, methods of operation, laws discovered, and results of the nine years' work in the production of new winter wheats, previously published as Bulletin 89 of the station.

Tillage in Its Relation to Soil Moisture. By C. C. Thom. (Popular Bulletin 22, pp. 4.)

This bulletin gives some of the methods of soil cultivation which will best conserve the moisture of the soil.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Potato Culture in Northern Wisconsin. By E. P. Sandsten and E. J. Delwiche. (Bulletin 177, pp. 3-17, fig. 1.)

This bulletin discusses a few of the most important problems connected with potato culture in Wisconsin which confront growers at the present time.

The Field Pea in Wisconsin. By R. A. Moore and E. J. Delwiche. (Bulletin 178, pp. 3-12, figs. 4.)

The object of this bulletin is to discuss the subject of pea raising from a practical standpoint regarding the planting, harvesting, thrashing, and storing of the crop.

The Eradication of Farm Weeds with Iron Sulphate. By R. A. Moore and A. L. Stone. (Bulletin 179, pp. 3-17, figs. 6.)

The results of experiments conducted by the station in 1906 and 1907 for the eradication of mustard and other farm weeds by spraying with iron sulphate are reported.

Fertilizers for Wisconsin Farms. By F. W. Woll. (Bulletin 180, pp. 3-46.)

This bulletin discusses the purchase, value, and use of commercial and farm fertilizers for the maintenance of soil fertility, and gives analyses of the fertilizers licensed for sale in the State in 1909 and the text of the Wisconsin fertilizer law.

The Propagation of Pure Starters for Butter and Cheese Making. By E. G. Hastings. (Bulletin 181, pp. 3-17, figs. 4.)

This bulletin gives a description of the methods of propagating and handling starters so as to avoid the things which cause a starter to change from a desirable to an objectionable one.

The Wisconsin Feeding Stuff Law. By F. W. Woll. (Circular of Information 1, pp. 9.)

The text of the feeding-stuff law as amended in 1909 is presented and discussed.

Directions for Spraying Potatoes. By J. G. Milward. (Circular of Information 3, pp. 8, figs. 3.)

Directions for spraying potatoes for the control of fungus diseases, suggestions regarding the machinery and its care, and formulæ for insect sprays are given in this circular.

The Wisconsin Seed Inspection Law. By A. L. Stone. (Circular of Information 4, pp. 10.)

The text of the law is presented and discussed in this circular.

The Hollow Concrete Fence Post. By C. A. Ocock. (Circular of Information 5, pp. 4, fig. 1.)

This circular gives information regarding methods of making hollow concrete fence posts for farm purposes.

Synopsis of Wisconsin Drainage Laws with Forms and General Suggestions. By E. R. Jones. (Circular of Information 6, pp. 19.)

This synopsis of drainage laws is supplemented by a list of the names of dredge owners, tile makers, and drainage engineers doing business in the State.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING DECEMBER, 1909.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA TUSKEGEE STATION, Tuskegee Institute, G. W. Carver, Director.

Some Ornamental Plants of Macon County, Ala. By G. W. Carver.
(Bulletin 16, pp. 5-24, figs. 8.)

Notes are given on the useful and ornamental plants growing in Alabama, with a short description of each variety mentioned, setting forth in as brief and as clear a manner as possible a few of the chief merits of the plant in question, and also the localities where they are most likely to be found.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

The Relation of Weather to Crops and Varieties Adapted to Arizona Conditions. By A. J. McClatchie and J. E. Coit. (Bulletin 61, pp. 465-524, fig. 1.)

The aim of this bulletin is not only to record and discuss the observations made during the past ten years upon the relation of weather to crops, but to indicate as far as possible those varieties which have been shown by popular experience as well as by station test to succeed best in the region.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Agriculture in the High Schools. By L. Anderson. (Circular 47, pp. 3-18.)

This circular gives information regarding the teaching of agriculture in high schools, including an outline of studies for four years and a list of bulletins, circulars, and books on agriculture.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Garden and Field Seeds Sold in Connecticut in 1908-9. By E. H. Jenkins and Mary H. Jagger. (Bulletin 164, pp. 3-26.)

The results of germination and purity tests made at the station of seeds from the Connecticut market in 1908 and 1909 are reported in this bulletin.

The San José Scale and Methods of Controlling It. By W. E. Britton. (Bulletin 165, pp. 3-24, figs. 12.)

This bulletin gives notes on the history of the San José scale, its appearance, effect on trees, means of spread, life history, food plants, natural enemies, and means of control.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Bacillary White Diarrhea of Young Chicks. By L. F. Rettger and F. H. Stoneburn. (Bulletin 60, pp. 33-57, figs. 7.)

This is a preliminary report of investigations conducted by the Sheffield Scientific School of Yale University and the Storrs Station on the white diarrhea of young chicks, the important results already secured being reported in this bulletin.

ILLINOIS STATION, Urbana, E. Davenport, Director.

A Study of Factors Influencing the Composition of Butter. By C. E. Lee, N. W. Hepburn, and J. M. Barnhart. (Bulletin 137, pp. 315-366.)

The results of experiments are reported to determine the factors which influence the composition of butter, including analyses of butter in 80 consecutive churning, when samples are taken from the churn, from 4 tubs from each churning 24 hours later, and from 2 of these same tubs after 6 or 7 months in storage.

Dairy Suggestions from European Conditions as Seen in the British Isles, Holland, and Denmark. By W. J. Fraser and R. E. Brand. (Bulletin 140, pp. 461-521, figs. 92.)

This bulletin is the result of a summer spent in making a detailed study of the methods employed in the production of milk on the farms of the intensive dairy countries of Great Britain, Holland, and Denmark, the main purpose in the study being to look for points in which European dairymen excel.

Handling of Cream and Making of Butter on the Farm. By C. E. Lee. (Circular 131, pp. 10.)

The purpose of this circular is to present specific directions for the making of dairy butter on farms.

Feeding the Pig. By W. Dietrich. (Circular 133, pp. 19, figs. 3.)

The object of this bulletin is (1) to give some of the principal facts that have been determined as a result of experiments on the economical and profitable feeding of pigs, and (2) "to outline a method for calculating rations according to the standard herein set forth."

INDIANA STATION, Lafayette, A. Goss, Director.

Winter Steer Feeding, 1908-9. By J. H. Skinner and W. A. Cochel. (Bulletin 136, pp. 3-48.)

This bulletin discusses: (1) The influence of age on the economy and profit of fattening steers in winter; (2) the value of corn silage, cotton-seed meal, and clover hay for fattening two-year-old steers; and (3) the results of short *v.* long feeding periods.

Dairy By-products as Supplements to Corn for Fattening Hogs. By J. H. Skinner and W. A. Cochel. (Bulletin 137, pp. 51-72.)

This bulletin gives the results of experiments to test the comparative values of dairy by-products and commercial feeds for fattening hogs.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Prairie-dog Situation. By T. H. Scheffer. (Circular 4, pp. 7, fig. 1.)

This circular gives a history of the prairie-dog situation in Kansas, the station's method of combating prairie dogs, and other information for the control of this pest.

MAINE STATION, Orono, C. D. Woods, Director.

Official Inspections. (Official Inspection 14, pp. 101-140.)

This contains the full text of the Maine food and drug law as amended, the standards and definitions of foods and drugs, and the regulations that have been adopted as revised to September, 1909.

Official Inspections. (Official Inspection 15, pp. 141-152.)

Notes are given on the sale of apples and the standard for oysters in Maine, and the results of the inspection and analyses of samples of catchup, cocoa, extracts, and spirit of nitrous ether are reported.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon.

(Meteorological Bulletin 251, pp. 4.)

This is a summary for November, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Grape Spraying Experiments in Michigan, 1907-8. By C. L. Shear and L. A. Hawkins. (Special Bulletin 49, pp. 3-16, figs. 6.)

The results of spraying experiments to control the black rot of the grape in Michigan are presented in this bulletin.

NEW HAMPSHIRE STATION, Durham, E. D. Sanderson, Director.

The Availability of the Soil Potash in Clay and Clay Loam Soils.

By F. W. Morse and B. E. Curry. (Bulletin 142, pp. 39-58, fig. 1.)

This bulletin reports the results of experiments conducted during the years 1905-1908, inclusive, to determine the rate of availability of the natural potash compounds in typical clay soils of New Hampshire, and whether it was sufficiently rapid to produce large crops without exhausting the soluble compounds.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Pure Beverage Law. Sanitary Inspection Law. Rulings and Discussions. (Special Bulletin 11, pp. 14.)

The texts of the beverage and sanitary inspection laws of North Dakota are reported in this bulletin, together with rules and regulations relating to these laws.

Special Bulletin Food Department. (Special Food Bulletin 15, pp. 47-62.)

A list is given of the beverages registered under the law and the examination of a number of foods, ice cream, and soft beverages for sale in the State is reported.

Special Bulletin Food Department. (Special Food Bulletin 17, pp. 79-88.)

The text of a proposed model food law as drawn up by a committee appointed at the Denver convention of the Association of State and National Food and Dairy Departments is given and discussed in this bulletin.

Special Bulletin Food Department. (Special Food Bulletin 18, pp. 89-104.)

The results of the examination of a number of medicines, drugs, and other substances on sale in the State are reported in this bulletin.

Special Bulletin Food Department. (Special Food Bulletin 19, pp. 105-114.)

The results of milling and baking tests with durum wheat are reported in this bulletin.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Blade Blight of Oats—A Bacterial Disease. By T. F. Manns. (Bulletin 210, pp. 91–167, pls. 15.)

This bulletin reviews the literature of this subject, discusses the distribution of the disease and the losses arising therefrom, and gives the results of experiments to determine the cause of oat blight which is attributed to the symbiotic relation between two species of bacteria.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Experiments in Pig Feeding. By T. I. Mairs and S. W. Doty. (Bulletin 95, pp. 3–16, figs. 6.)

The results of experiments to compare white middlings with a mixture of corn meal and tankage for growing and fattening pigs, including data on slaughter tests, are reported in this bulletin.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Ropy Milk in Rhode Island. By L. J. Cole and P. B. Hadley. (Bulletin 136, pp. 129–152.)

This bulletin presents the results of a study of so-called "ropy" or "stringy" milk, made by the station in 1908, the subject being discussed under (1) the history and cause of the infection, and (2) a study and description of the causative organism.

TEXAS STATION, College Station, H. H. Harrington, Director.

The Pecan Case-bearer. By G. W. Herrick. (Bulletin 124, pp. 4–10, figs. 4.)

This bulletin gives notes on the life history and habits of the pecan case-bearer (*Acrobasis nebulella*), on its natural enemies, and means of control.

UTAH STATION, Logan, E. D. Ball, Director.

Irrigation Investigations. Factors Influencing Evaporation and Transpiration. By J. A. Widtsoe. (Bulletin 105, pp. 64, figs. 8.)

The irrigation investigations conducted by the station were undertaken for the purpose of adding to our knowledge of the natural laws upon which the art of irrigation may be safely built, the direct object being to study the mutual relations of plants, soil, and water in order to discover the most economic use of water for plant production.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Single Spray for the Codling Moth. By A. L. Melander. (Popular Bulletin 17, pp. 4, figs. 4.)

Directions are given in this bulletin for the control of the codling moth.

Summary of Experiment Station Work. By E. A. Bryan. (Popular Bulletin 20, pp. 7.)

A summarized account of the work of the station since 1893.

Trees in Washington. By W. S. Thornber. (Popular Bulletin 23, pp. 4.)

Notes are given in this circular on the propagation, transplanting, and care of trees, with a list of trees that have been found useful for special purposes in Washington.

The Pruning of Apple Trees. By W. S. Thornber. (Popular Bulletin 24, pp. 4.)

Notes are given in this bulletin regarding certain principles and practices of summer and winter pruning of apple trees.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The Wisconsin Butter and Cheese Scoring Exhibitions. By E. H. Farrington and M. Michels. (Bulletin 182, pp. 3-42, figs. 2.)

The plan of the exhibitions, methods of judging butter and cheese, and the results of the work are described in this bulletin. An appendix gives a series of notes intended as an aid to butter and cheese makers in locating the most common defects found in butter and cheese.

Growing Clover for Seed and Forage in Northern Wisconsin. By R. A. Moore and E. J. Delwiche. (Bulletin 183, pp. 3-14, figs. 3.)

The purpose of this bulletin is to call attention to such points as are of greatest importance in the culture of this valuable crop.

Practical Swine Management. By J. G. Fuller. (Bulletin 184, pp. 3-22, figs. 13.)

The purpose of this bulletin is to advise the beginner and the student and answer a large number of questions which frequently confront the swine breeder.

The Propagation of Pure Culture Starters for Butter and Cheese Making. By E. H. Farrington and E. G. Hastings. (Circular of Information 2, pp. 4.)

Notes are given in this circular on the propagation and handling of pure starters for butter and cheese making.

The Agricultural Extension Service. (Circular of Information 7, pp. 14.)

This circular presents the different lines of work of the extension service that has been organized by the Wisconsin College of Agriculture and Experiment Station for bringing the practical benefits of the work of the station to a larger proportion of the farmers of the State.

Corn Judging. By R. A. Moore. (Circular of Information 8, pp. 16, figs. 10.)

This circular gives directions for the judging of corn as a basis for corn improvement and increasing the yield in Wisconsin.



